Aristotle's

Works

RISTOTLE'S WORKS:

CONTAINING

DIRECTIONS FOR MIDWIVES,

AND

OUNSEL AND ADVICE

TO

CHILD-BEARING WOMEN.

WITH VARIOUS

USEFUL REMEDIES.

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ADVERTISEMENT.

At the present time, when so many of the female sex, in the hour of Nature's extremity, depend solely upon the skill and practical experience of the Midwife, we regard every attempt to assist the female accoucheur in her difficult, and sometimes dangerous operation, as a blessing conferred upon society.

This treatise enters fully into every department of Midwifery; and lays down excellent rules, and proposes valuable suggestions for the guidance of the female operator, which, if acted upon, will not only redound to the credit of the practitioner, but will be of immense benefit to those operated upon. Another valuable feature of this work is, that it contains important directions for the guidance of child-bearing women during the time of their pregnancy: how they should conduct themselves with regard to regimen, medical treatment, and other matters, each month, until the time of their

delivery. In short, we venture to assert that if the counsel and advice given in the Experienced Midwife be strictly adhered to by all parties interested therein, the travail in child-birth, instead of being many times difficult and dangerous, will be safe, speedy, and comparatively easy.

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ARISTOTLE'S WORKS.

GUIDE TO CHILD-BEARING WOMEN.

BOOK I.—CHAPTER I.

SECT. I. *Of the womb.*

IN this Chapter I am to treat of the womb, which the Latins call matrix. Its parts are two; the mouth of the womb, and the bottom of it. The mouth is an orifice at the entrance into it, which may be shut together like a purse. When a woman is not with child, it is a little oblong, and of substance very thick and close; but when she is with child it is shortened, and its thickness diminisheth proportionably to its distension: and therefore it is a mistake of anatomists, who affirm that its

substance waxeth thicker a little before a woman's labour; for any one's reason will inform him, that the more distended it is, the thinner it must be; and the nearer a woman is to the time of her delivery, the shorter her womb must be extended.

The Author of Nature has placed the womb in the belly, that the heat might always be maintained by the warmth of the parts surrounding it: it is therefore seated in the middle of the hypogastrium (or lower part of the belly,) between the bladder and the rectum (or right gut) by which also it is defended from any hurt through the hardness of the bones: and it is placed in the lower part of the belly for the conveniency of a birth's being thrust out at the full time.

It is of a figure almost round, inclining somewhat to an oblong, in part resembling a pear; for, being broad at the bottom, it gradually terminates in the point of the orifice, which is narrow.

The length, breadth, and thickness of the womb differ according to the age and the disposition of the body. For in virgins not ripe it is very small in all its dimensions; but, in women whose terms flow in great quantities, it is much larger; and if they have had children, it is larger in them than in such as have had none; but, in women of a good stature, and

well shaped, it is, (as I have said before), from the entry of the privy parts to the bottom of the womb, usually about eight inches; but the length of the body of the womb alone does not exceed three; the breadth thereof is near about the same, and of the thickness of the little finger, when the womb is not pregnant; but, when the woman is with child, it becomes of a prodigious greatness, and the nearer she is to her delivery the more is the womb extended.

It is not without reason, then, that nature (or the God of Nature) has made the womb of a membranous substance; for thereby it does the easier open to conceive, is gradually dilated by the growth of the fœtus, or young one, and is afterwards contracted and closed again, to thrust forth both it and the after-burden, and it is to retire to its primitive seat. Hence also then enabled to expel any obnoxious humours which may sometimes happen to be contained within it.

Before I have done with the womb, which is the field of generation, and ought therefore to be the more particularly taken care of, (for as the seeds of plants can produce no plants, nor spring, unless sown in ground proper to awake and excite their vegetative virtue, so likewise the seed of man, though potentially containing all the parts of a child, would never produce so admirable an effect, if it were not cast into the

fruitful field of nature, the womb,) I shall proceed to a more particular description of its parts, and the uses for which nature hath designed them.

The womb then is composed of various similar parts, that is, of membranes, veins, arteries, and nerves. Its membranes are two, and they compose the principal parts of the body; the outermost of which ariseth from the peritoneum, or caul, and is very thin; without smooth, and within equal, that it may the better cleave to the womb, as it is fleshier and thicker than any thing else we meet within the body when the woman is not pregnant, and is interwoven with all sorts of fibres and small strings, that it may the better suffer the extension of the child and the waters caused during pregnancy, and also that it may the easier close again after delivery.

The veins and arteries proceed both from the hypogastrics and the spermatic vessels, of which I shall speak by and by; all these are inserted and terminated in the proper membrane of the womb. The arteries supply it with food for nourishment, which, being brought together in too great a quantity, sweats through the substance of it, and distils as it were a dew at the bottom of the cavity; from whence do proceed both the terms in ripe virgins, and the blood which nourisheth the

embryo in breeding women. The branches which issue from the spermatic vessels are inserted on each side of the bottom of the womb, and are much less than those which proceed from the hypogastrics, those being greater, and bedewing the whole substance of it. There are yet some other small vessels, which, arising the one from the other, are conducted to the internal orifice, and by these, those that are pregnant do purge away the superfluity of the terms, when they happen to have more than is used in the nourishment of the infant; by which means nature hath taken such care of the womb, that during its pregnancy it shall not be obliged to open itself for the passing away those excrementitious humours, which, should it be forced to do, might often endanger abortion.

As touching the nerves, they proceed from the brain, which furnishes all the inner parts of the lower belly with them, which is the true reason it hath so great a sympathy with the stomach, which is likewise very considerably furnished from the same part: so that the womb cannot be afflicted with any pain but the stomach is immediately sensible thereof, which is the cause of those loathings or frequent vomitings which happen to it.

But, besides all these parts which compose the womb, it hath yet four ligaments, whose

office is to keep it firm in its place, and prevent its constant agitation, by the continual motion of the intestines which surround it; two of which are above, and two below. Those above are called the broad ligaments, because of their broad and membranous figure, and are nothing else but the production of the peritoneum, which growing out of the side of the loins, towards the reins, come to be inserted in the sides of the bottom of the womb, to hinder the body from bearing too much on the neck, and so from suffering a precipitation, as will sometimes happen when the ligaments are too much relaxed; and do also contain the testicles, and as well safely conduct the different vessels as the ejaculatories to the womb. The lowermost are called round ligaments, taking their original from the side of the womb near the horn, from whence they pass the groin, together with the production of the peritoneum, which accompanies them through the rings and holes of the oblique and transverse muscles of the belly, by which they divide themselves into many little branches, resembling the foot of a goose, of which are some inserted into the os pubis, and the rest are lost and confounded with the membranes that cover the upper and interior parts of the thigh; and it is that which causeth the numbness which women with child feel in their

thighs. These two ligaments are long, round, and nervous, and pretty big in their beginning, near the matrix, hollow in their rise, and all along to the os pubis, where they are a little smaller, and become flat, the better to be inserted in the manner aforesaid. It is by their means the womb is hindered from rising too high. Now, although the womb is held in its natural situation by means of these four ligaments, it has liberty enough to extend itself when pregnant, because they are very loose, and so easily yield to its distension. But, besides these ligaments, which keep the womb as it were in a poise, yet it is fastened, for greater security, by its neck, both to the bladder and rectum, between which it is situated.—Whence it comes to pass, that if at any time the womb be inflamed, it communicates the inflammation to the neighbouring parts.

Its use or proper action, in the work of generation, is to receive and retain the seed, and deduce from its power and action, by its heat, for the generation of the infant; and is therefore absolutely necessary for the conservation of the species. It also seems by accident to receive and expel the impurities of the whole body, as when women have abundance of whites; and to purge away, from time to time, the superfluity of the blood, as when a woman is not with child.

SECT. II.—*Of the Difference between the Ancient and Modern Physicians, touching the Woman's contributing Seed for the Formation of the Child.*

OUR modern anatomists and physicians are of different sentiments from the ancients touching the woman's contributing of seed for the formation of the child, as well as the man; the ancients strongly affirming it, but our modern authors being generally of another judgment. I will not make myself a party in this controversy, but set down impartially, yet briefly, the arguments on each side, and leave the judicious reader to judge for himself.

Though it is apparent, say the ancients, that the seed of man is the principal efficient and beginning of action, motion, and generation, yet that the woman affords seed, and contributes to the procreation of the child, it is evident from hence, that the woman has seminal vessels, which had been given her in vain if she wanted seminal excrescence; but since nature forms nothing in vain, it must be granted they were made for use of seed and procreation, and fixed in their proper places, to operate, and contribute virtue and efficiency to the seed.

But against all this, our modern authors affirm, that the ancients are very erroneous, in-

asmuch as the testicles in women do not afford seed, but are two eggs, like those of fowls and other creatures; neither have they any such offices as in men, but are indeed an ovarium, or receptacle for eggs, wherein these eggs are nourished by the sanguinary vessels dispersed through them; and from thence one or more, as they are fecundated by the man's seed, are conveyed into the womb by the oviducts. And the truth of this, say they, is so plain, that if you boil them, the liquor will have the same taste, colour, and consistency, with the taste of birds' eggs. And if it be objected, that they have no shells, the answer is easy; for the eggs of fowls, while they are in the ovary, nay, after they have fallen into the uterus, have no shell; and though they have one when they are laid, yet it is no more than a fence which nature has provided for them against outward injuries, they being hatched without the body; but those of women being hatched within the body, have no need of any other fence than the womb to secure them.

They also further say, there are in the generation of the fœtus, or young ones, two principles, *active* and *passive*: the *active* is the man's seed elaborated in the testicles, out of the arterial blood and animal spirit; the *passive* principle is the ovum, or egg, impregnated by the man's seed: for to say that women have

true seed, say they, is erroneous. But the manner of conception is this: the most spirituous part of man's seed, reaching up to the ovarium or testicles of the woman (which contains divers eggs, sometimes more, sometimes fewer), impregnates one of them; which, being conveyed by the ovaducts to the bottom of the womb, presently begins to swell bigger and bigger, and drinks in the moisture that is plentifully sent thither, after the same manner that the seeds in the ground suck in the fertile moisture thereof, to make them sprout.

Having thus laid the foundation of this work, I will now proceed to speak of conception, and of those things that are necessary to be observed by women from the time of their conception to the time of their delivery.

CHAP. II.

OF CONCEPTION; WHAT IT IS; HOW WOMEN ARE TO ORDER THEMSELVES AFTER CONCEPTION.

SECT. I. *What Conception is.*

CONCEPTION is nothing else but an action of the womb, by which the prolific seed is receiv-

ed and retained, that an infant may be engendered and formed out of it. There are two sorts of conception: the one according to nature, which is followed by the generation of the infant in the womb; the other false, and wholly against nature, in which the seed changes into water, and produces only false conceptions, moles, or other strange matter. Nay, there are three things principally necessary in order to a true conception, so that generation may follow, viz. diversity of sex, congression, and emission of seed. Without diversity of sex there can be no conception; for, though some will have a woman to be an animal that can engender of herself, it is a great mistake; there can be no conception without a man discharge his seed into the womb. What they allege of pullets laying eggs without a cock's treading them is nothing to the purpose; for those eggs, should they be set under a hen, will never become chickens, because they never received any prolific virtue from the male, which is absolutely necessary to this purpose, and is sufficient to convince us, that diversity of sex is necessary even to those animals, as well as to the generation of man.

SECT. II. *How a Woman ought to order herself after Conception.*

MY design in this treatise being brevity, I shall bring forward a little of what the learned have said of the causes of twins, and whether there be any such thing as superfœtations, or a second conception, in a woman, (which is yet common enough) when I come to show you how the midwife ought to proceed in the delivery of the women that are pregnant with them. But, having already spoke of conception, I think it now necessary to show how such as have conceived ought to order themselves during their pregnancy, that they may avoid those inconveniences which often endanger the life of the child, and many times their own.

A woman, after conception, during the time of her being with child, ought to be looked upon as indisposed or sick, though in good health; for child-bearing is a kind of nine months' sickness, being all that time in expectation of many inconveniences which such a condition usually causes to those that are not well governed during that time; and therefore ought to resemble a good pilot, who, when sailing on a rough sea, and full of rocks, avoids and shuns the danger, if he steers with prudence; but if not, it is a thousand to one but

he suffers shipwreck. In like manner, a woman with child is often in danger of miscarrying and losing her life, if she is not very careful to prevent those accidents to which she is subject all the time of her pregnancy; all which time her care must be double, first of herself, and secondly of the child she goes with; for otherwise, a single error may produce a double mischief; for, if she receives a prejudice, her child also suffers with her. Let a woman, therefore, after conception, observe a good diet, suitable to her temperament, custom, condition, and quality: and if she can, let the air where she ordinarily dwells be clear and well tempered, free from extremes either of heat or cold; for being too hot it dissipateth the spirits too much, and causeth many weaknesses; and by being too cold and foggy, it may bring down rheums and distillations on the lungs, and so cause her to cough, which, by its impetuous motion, forcing downwards, may make her miscarry. She ought always to avoid all nauseous and ill smells; for sometimes the stench of a candle, not well put out, may cause her to come before her time; and I have known the smell of charcoal to have the same effect. Let her also avoid smelling of rue, mint, pennyroyal, castor, brimstone, &c.

But, with respect to their diet, women with child have generally so great loathings, and so

many different longings, that it is very difficult to prescribe an exact diet for them. Only this I think advisable, that they may use those meats and drinks which are to them most desirable, though perhaps not in themselves so wholesome as some others, and, it may be, not so pleasant; but this liberty must be made use of with this caution, that what they desire be not in itself unwholesome: and also, that in every thing they take care of excess. But, if a child-bearing woman finds herself not troubled with such longings as we have spoken of, let her take simple food, and in such quantity as may be sufficient for herself and the child, which her appetite may in a great measure regulate; for it is alike hurtful for her to fast too long, or eat too much; and, therefore, rather let her eat a little and often; especially let her avoid eating too much at night; because the stomach being too much filled, compresseth the diaphragm, and thereby causeth difficulty of breathing. Let her meat be easy of digestion, such as the tenderest parts of beef, mutton, veal, sows, pullets, capons, pigeons, and partridges, either boiled or roasted, as she likes best; new laid eggs are also very good for her; and let her put into her broth those herbs that purify it, as sorrel, lettuce, succory, and burrage; for they will purge and purify the blood. Let her avoid whatever is hot seasoned, espe-

Rules for the First Two Months.

As soon as a woman knows (or has reason to believe) she hath conceived, she ought to abstain from all violent motions and exercises; whether she walks on foot, or rides on horseback, or in a coach, it ought to be very gently. Let her beware she lift not her arms too high, nor carry great burdens, nor repose herself on hard and uneasy seats. Let her use moderately good juicy meat, and of easy digestion; and let her wine be neither too strong nor too sharp, but a little mingled with water; or if she be very abstemious, she may use water wherein cinnamon is boiled. Let her avoid fastings, thirst, watchings, mourning, sadness, anger, and all other perturbations of the mind. Let none present any strange or unwholesome thing to her, nor so much as name it, lest she should desire it, and not be able to get it, and so either cause her to miscarry, or the child to have some deformity on that account. Let her bowels be kept loose with prunes, raisins, or manna, in her broth; and let her use the following electuary, to strengthen the womb and the child:—

"Take conserve of burrage, buglos, and red roses, each two ounces; of balm an ounce; citron peel and shreds, mirobalans candied,



Conception.



First Month.

Second



Month.



Third Month.



Fourth Month.

each an ounce; extract of wood aloes, a scruple; pearl prepared, half a drachm; red coral, ivory, each a drachm; precious stones, each a scruple; candied nutmegs, two drachms: and with syrup of apples and quinces make an electuary."

Let her observe the following Rules.

"Take pearls prepared, a drachm; red coral prepared and ivory, each half a drachm; precious stones, each a scruple; yellow citron peels, mace, cinnamon, cloves, each half a drachm; saffron, a scruple; wood aloes, half a scruple; ambergris, six drachms; and with six ounces of sugar dissolved in rose-water, make rolls." Let her also apply strengtheners to the navel, of nutmeg, mace, mastich, made up in bags, or a toast dipped in malmsey, sprinkled with powder of mint. If she happens to desire clay, chalk, or coals, (as many women with child do), give her beans boiled with sugar; and if she happens to long for any thing that she cannot obtain, let her drink a large draught of pure cold water.

Rules for the Third Month.

In this month and the next, be sure to keep from bleeding; for though it may be safe and proper at other times, yet it will not be so to

the end of the fourth month; and yet if blood abound, or some incidental disease happen, which requires evacuation, you may use a cupping-glass, with scarification, and a little blood may be drawn from the shoulders and arms, especially if she has been accustomed to bleed. Let her also take care of lacing herself too straitly, but give herself more liberty than she used to do; for, inclosing her abdomen in too strait a mould, she hinders the infant from taking its free growth, and often makes it come before its time.

Rules for the Fourth Month.

In this month also you ought to keep the child-bearing woman from bleeding, unless in extraordinary cases; but when the month is past, bloodletting and physic may be permitted, if it be gentle and mild; and perhaps it may be necessary to prevent abortion. In this month she may purge, in the acute disease; but purging may be used only from the beginning of this month to the end of the sixth: but let her take care that in purging she use no vehement medicine, nor any bitter, as aloes, which is disagreeable and hurtful to the child, and opens the mouth of the vessels; neither let her use coloquintida, scammony, nor turbith; she may use cassia, manna, rhubarb, agaric, and

senna: but dyacidodium purgans is best, with a little of electuary of the juice of roses.

Rules for the Fifth, Sixth, and Seventh Months.

In these months child-bearing women are troubled with coughs, heart-beating, fainting, watching, pains in the loins and hips, and bleeding. The cough is from a sharp vapour that comes to the jaws and rough artery from the terms, or the thin part of that blood gotten into the veins of the breast, or falling from the head to the breast; this endangers abortion, and strength fails from watching; therefore purge the humours that come to the breast with rhubarb and agaric, and strengthen the head as in a catarrh, and give sweet lenitives, as in a cough. Palpitation and fainting arise from vapours that go to it by the arteries, or from blood that aboundeth, and cannot get out at the womb, but ascends, and oppresseth the heart; and in this case, cordials should be used both inwardly and outwardly. Watching is from sharp dry vapours that trouble the animal spirits, and in this case use frictions, and let the woman wash her feet at bed-time, and let her take syrup of poppies, dried roses, emulsions of sweet almonds, and white poppy seed. If she be troubled with pains in her loins and hips, as in these months she is subject to be, from the weight of her

[illegible] is now grown big and heavy, and so [illegible] the ligaments of the womb, and parts [illegible] let her hold it up with swathing [illegible] about her neck. About this time also [illegible] often happens to have a flux of [illegible] at the nose, womb, or hemorrhoids, from plenty of blood, or from the weakness of the child that takes it not in; or else from evil [illegible] in the blood, that stirs up nature to [illegible] it forth. And sometimes it happens that the vessels of the womb may be broken, either by some violent motion, fall, cough, or trouble of mind, (for any of these will work that effect); and this is so dangerous, that in such a case the [illegible] be well; but if it be from blood [illegible] the danger is less, provided it flows by the [illegible] of the womb; for then it pre-[illegible], and takes not away the nour-[illegible] of the child; but if it proceeds from [illegible] of the child, that draws it not in, [illegible] child often follows, or hard [illegible] goes beyond her time. But [illegible] of the womb, [illegible] of the [illegible]

child, who is now grown big and heavy, and so stretcheth the ligaments of the womb, and parts adjacent, let her hold it up with swathing bands about her neck. About this time also the woman often happens to have a flux of blood; either at the nose, womb, or hemorrhoids, from plenty of blood, or from the weakness of the child that takes it not in; or else from evil humour in the blood, that stirs up nature to send it forth. And sometimes it happens that the vessels of the womb may be broken, either by some violent motion, fall, cough, or trouble of mind, (for any of these will work that effect); and this is so dangerous, that in such a case the child cannot be well; but if it be from blood only, the danger is less, provided it flows by the veins of the neck of the womb; for then it prevents plethory, and takes not away the nourishment of the child; but if it proceeds from the weakness of the child, that draws it not in, abortion of the child often follows, or hard travail, or else she goes beyond her time. But if it flows by the inward veins of the womb, there is more danger by the openness of the womb, if it come from evil blood; the danger is alike from cacochimy, which is like to fall upon both. If it arises from plethory, open a vein, but with great caution, and use astringents, of which the following will do well:—Take pearls prepared, a scruple; red coral, two scruples;



Fifth Month.



Sixth Month.



Seventh Month.



Eighth Month.



Ninth Month.

mace, nutmegs, each a drachm; cinnamon, half a drachm; make a powder: or, with sugar, make rolls. Or give this powder in broth: "Take red coral, a drachm; half a drachm, precious stones; red sander, half a drachm; bole, a drachm; sealed earth, tormented roots, each two scruples, with sugar of roses, and manus Christi; with pearl, five drachms; make a powder." You may also strengthen the child at the navel; and if there be a cacochimy, alter the humours; and if you may do it safely, evacuate: you may likewise use amulets in her hands and about her neck. In a flux of hemorrhoids wear off the pain; and let her drink hot wine with a toasted nutmeg. In these months the bowels are also subject to be bound; but if it be without any apparent disease, the broth of a chicken, or veal sodden with oil, or with the decoction of mallows, or marshmallows, mercury, or linseed, put up in a clyster, will not be amiss, but in less quantity than is given in other cases: viz. of the decoction five ounces, of cassia fistula one ounce. But if she will not take a clyster, one or two yolks of new laid eggs, or a little peas-pottage warm, a little salt and sugar, supped a little before meat, will be very convenient. But if her bowels be distended and stretched out with wind, a little fennel-seed and aniseed reduced into a powder, and mingled with honey and sugar, made after the manner

of an electuary, will do very well. Also, if the thighs and feet swell, let them be anointed with exphrodinum (which is a liquid medicine made with vinegar and rose-water, mingled with salt.)

Rules for the Eighth Month.

The eighth is commonly the most dangerous, therefore the greatest care and caution ought to be used; the diet better in quality, but no more, nor indeed so much in quantity as before; but as she must abate her diet, so she must increase her exercise: and because then women with child, by reason that sharp humours alter the belly, are accustomed to weaken their spirit and strength, they may well take before meat an electuary of diarrhoden or aromaticum rosatum, or diamagarton; and sometimes they may lick a little honey: as they will loath and nauseate their meat, they may take green ginger candied with sugar, or the rinds of citron and oranges candied; and let them often use honey for the strengthening of the infant. When she is not far from her labour, let her eat every day seven roasted figs before her meat, and sometimes let her lick a little honey. But let her beware of salt and powdered meat, for it is neither good for her nor the child.

Rules for the Ninth Month.

In the ninth month let her have a care of lifting any great weight; but let her move a little more, to dilate the parts and stir up natural heat. Let her take heed of stooping, and neither sit too much, nor lie on her sides; neither ought she to bend herself much, lest the child be unfolded in the umbilical ligament, by which means it often perisheth. Let her walk and stir often, and let her exercise be rather to go upwards than downwards. Let her diet, now especially, be light and easy of digestion; and damask prunes with sugar, or figs with raisins, before meat; as also the yolk of eggs, flesh and broth of chickens, birds, partridges and pheasants; astringent and roasted meats, with rice, hard eggs, millet, and such like other things, are proper. Baths of sweet water, with emollient herbs, ought to be used by her this month with some intermission; and after the baths, let her belly be anointed with oil of sweet roses and violets; but for her privy parts it is better to anoint them with the fat of hens, geese, or ducks, or with oil of lilies, and the decoction of linseed and fenugreek, boiled with oil of linseed and marshmallows, or with the following liniment:—

"Take of mallows and marshmallows, cut

and shred, of each an ounce; of linseed one ounce; let them be boiled from twenty ounces of water to ten; then let her take three ounces of the boiled broth; of oil of almonds and oil of flower-de-luce, of each one ounce; of deer's suet three ounces." Let her bathe with this, and anoint herself with it warm.

If for fourteen days before the birth she do every morning and evening bathe and moisten her belly with muscadine and lavender water, the child will be much strengthened thereby. And if every day she eat toasted bread, it will hinder any thing from growing to the child. Her privy parts may be gently stroked down with this fomentation.

"Take three ounces of linseed, and one handful each of mallows and marshmallows sliced, then let them be put into a bag and immediately boiled." Let the woman with child, every morning and evening, take the vapour of this decoction in a hollow stool, taking great heed that no wind or air come to her in-parts, and then let her wipe the part so anointed with a linen cloth, and she may anoint the abdomen and groin as at first.

When she is come so near her time as to be within ten or fourteen days thereof, if she begins to feel any more than ordinary pain, let her use every day the following:—" Take mallows and marshmallows, of each one handful;

camomile, hard mercury, maiden-hair, of each a handful; of linseed, four ounces; let them be boiled in a sufficient quantity of water as to make a bath therewith." But let her not sit too hot upon the seat, nor higher than a little above her navel; nor let her sit on it longer than about half an hour, lest her strength languish and decay; for it is better to use it often than to stay too long in it.

And thus have I shown how a child-bearing woman ought to govern herself each month during her pregnancy. How she must order herself at her delivery, shall be shown in another chapter, after I have first shown the intended midwife how the child is first formed in the womb, and the manner of its decumbiture there.

CHAP. III.

Of the Parts proper to a Child in the Womb. How it is formed there, and the Manner of its Situation therein.

In the last chapter I treated of conception, showing what it was, how accomplished, its signs, and how she who has conceived ought to order herself during the time of her pregnancy. Now,

before I come to speak of her delivery, it is necessary that the midwife be first made acquainted with the parts proper to a child in the womb, and also, that she be shown how it is formed; and the manner of its situation and decumbiture there; which are so necessary to her, that without the knowledge thereof, no one can tell how to deliver a woman as she ought. This, therefore, shall be the work of this chapter. I shall begin with the first of these.

SECT. I. *Of the Parts proper to a Child in the womb.*

IN this section I must first tell you what I mean by the parts proper to a child in the womb; and they are only those that either help or nourish it, whilst it is lodged in that dark repository of nature, and that help to clothe and defend it there, and are cast away, as of no more use, after it is born; and these are two: viz. the umbilicurs, or navel vessels, and the secundinum. By the first it is nourished, and by the second clothed and defended from wrong. Of each of these I shall speak distinctly: and, first,

Of the Umbilicurs, or Navel Vessels.

These are four in number: viz. one vein, two arteries, and the vessel which is called the urachos.

1. The vein is that by which the infant is nourished, from the time of its conception till the time of its delivery; till, being brought into the light of this world it has the same way of concocting its food that we have. This vein ariseth from the liver of the child, and is divided into parts when it has passed the navel; and these two are divided and subdivided, the branches being upheld by the skin called *chorion* (of which I shall speak by and by), and are joined to the veins of the mother's womb, from whence they have their blood for the nourishment of the child.

2. The arteries are two on each side, which proceed from the back branches of the great artery of the mother; and the vital blood is carried by those to the child, being ready concocted by the mother.

3. A nervous or sinewy production is led from the bottom of the bladder of the infant to the navel, and this is called *urachos;* and its use is to convey the urine of the infant from the bladder to the alantois. Anatomists do very much vary in their opinions concerning this; some denying any such thing to be in the delivery of the woman; and others, on the contrary, affirming it: but experience has testified there is such a thing; for Bartholomew Carbrolius, the ordinary doctor of anatomy to the College of Physicians at Montpelier, in France,

records the history of a maid, whose water, being a long time stopped, at last issued out through the navel. And Johannes Fernelius speaks of the same thing that happened to a man of thirty years of age, who, having a stoppage at the neck of the bladder, his urine issued out of his navel many months together, and that without any prejudice at all to his health; which he ascribes to the ill lying of his navel, whereby the urachos was not well dried. And Volchier Coitas quotes such another instance in a maid of thirty-four years of age, at Nuremberg, in Germany. These instances, though they happen but seldom, are sufficient to prove that there is such a thing as an urachos in men.

These four vessels before mentioned, viz. one vein, two arteries, and the urachos, do join near to the navel, and are united by a skin, which they have from the chorin, and so become like a gut or rope, and are altogether void of sense, and this is that which women call the navel-string. The vessels are thus joined together, that so they may neither be broken, severed, nor entangled; and when the infant is born are of no use, save only to make up the ligament which stops the hole of the navel, and some other physical use, &c.

Of the Secundine, *or After-Birth.*

Setting aside the name given to this by the Greeks and Latins, it is called in English by the name of secundine, after-birth, or after-burden; which are held to be four in number.

I. The *first* is called placentia, because it resembles the form of a cake, and is knit both to the navel and chorion, and makes up the greatest part of the secundine, or after-birth. The flesh of it is like that of the melt, or spleen, soft, red, and tending something to blackness, and hath many small veins and arteries in it; and certainly the chief use of it is, for containing the child in the womb.

2. The *second* is the chorion. This skin, and that called the amnios, involve the child round, both above and underneath, and on both sides, which the alantois doth not. This skin is that which is most commonly called the secundine, as it is thick and white, garnished with many small veins and arteries, ending in the placentia before named, being very light and slippery. Its use is not only to cover the child round about, but also to receive and safely bind up the roots of the veins and arteries or navel vessels before described.

3. The *third* thing which makes up the secundine is the alantois, of which there is a great

dispute among anatomists. Some say, there is such a thing, and others that there is not. Those that will have it to be a membrane, say it is white, soft, and exceeding thin, and just under the placentia, where it is knit to the urachos, from whence it receives the urine; and its office is to keep it separate from the sweat, that the saltness may not offend the tender skin of the child.

4. The *fourth* and last covering of the child is called amnios; and it is white, soft, and transparent, being nourished by some very small veins and arteries. Its use is not only to enwrap the child, but also to retain the sweat of the child.

Having thus described the parts proper to a child in the womb, I will next proceed to speak of the formation of the child therein, as soon as I have explained the hard terms of this section, that those for whose help it is designed, may understand what they read. A *vein* is that which receives blood from the liver, and distributes it in several branches to all parts of the body. *Arteries* proceed from the heart, are in continual motion, and by their continual motion quicken the body. *Nerve* is the same with *sinew*, and is that by which the brain adds sense and motion to the body. *Placentia* properly signifies a *sugar cake*; but in this section it is used to signify a spongy piece of flesh,

resembling a cake, full of veins and arteries, and is made to receive the mother's blood appointed for the infant's nourishment in the womb. The *chorion* is the outward skin which compasseth the child in the womb. The *alantois* is the skin that holds the urine of the child during the time that it abides in the womb. The *urachos* is the vessel that conveys the urine from the child in the womb to the *alantois.* I now proceed to.

SECT. II. *Of the Formation of the Child in the Womb.*

THE woman having conceived, the first thing which is operative in the conception is the spirit whereof the seed is full, which nature quickening by the heat of the womb, stirs up to action. The internal spirits, therefore, separate the parts that are less pure, which are thick, cold and clammy, from those that are more pure and noble. The less pure are cast to the outsides, and with these the seed is circled round, and the membranes made, in which that seed which is the most pure is wrapped round, and kept close together, that it may be defended from cold and other accidents, and operate the better.

The first thing that is formed in the amnios; the next the chorion; and they enwrap the

seed round like a curtain. Soon after this (for the seed thus shut up in the woman lies not idle) the navel vein is bred, which pierceth those skins, being yet very tender, and carries a drop of blood from the veins of the mother's womb to the seed: from which drop the vena cava, or chief vein, proceeds, from which all the rest of the veins which nourish the body spring; and now the seed hath something to nourish it, whilst it performs the rest of nature's work, also blood administered to every part of it, to form flesh.

This vein being formed, the navel arteries are soon after formed; then the great artery, of which all others are but branches; and then the heart; for the liver furnisheth the arteries with blood to form the heart, the arteries being made of seed, but the heart and the flesh of blood. After this the brain is formed, and then the nerves to give sense and motion to the infant. Afterwards the bones and flesh are formed; and of the bones, first the vertebræ or chin bones, and then the skull, &c. As to the time in which this curious part of workmanship is formed, having already in the preceding Chapter, spoken distinctly and at large upon this point, and also of the nourishment of the child in the womb, I shall here only refer the reader thereto, and proceed to



Position of a Child in the Womb just before delivery.

show the manner in which the child lies in the womb.

Sect. III. *Of the manner of the Child's lying in the Womb.*

This is a thing so essential for a midwife to know, that she can be no midwife who is ignorant of it: and yet even about this, authors extremely differ; for there are not two in ten that agree what is the form that the child lies in the womb, or in what fashion it lies there; and yet this may arise in a great measure from the different figures that the child is found in, according to the different times of the woman's pregnancy; for near the time of its deliverance out of the winding chambers of nature, it oftentimes changes the form in which it lay before for another.

I will now show the several situations of the child in the mother's womb, according to the different times of pregnancy, by which those that are contrary to nature, and are the chief cause of all ill labours, will be more easily conceived by the understanding midwife. It ought, therefore, in the first place, to be observed, that the infant, as well male as female, is generally situated in the midst of the womb; for though sometimes, to appearance, a woman's belly seems higher on one side than another, yet it is

so with respect to the belly only, and not to her womb, in the midst of which it is always placed.

But, in the second place, a woman's great belly makes different figures, according to the different times of pregnancy; for, when she is young with child, the embryo is always found of a round figure, a little oblong, having the spine moderately turned inwards, the thighs folded, and a little raised, to which the legs are so raised, that the heels touch the buttocks; the arms are bending, and the hands placed upon the knees, towards which the head is inclining forwards, so that the chin toucheth the breast; in which posture it resembles one sitting to ease nature, and stooping down with the head to see what comes from him. The spine of its back is at that time placed towards the mother's, the head uppermost, the face downwards; and proportionably to its growth, it extends its members by a little and little, which were exactly folded in the first month. In this posture it usually keeps till the seventh or eighth month; and then by a natural propensity and disposition of the upper part of the body, the head is turned downwards toward the inward orifice of the womb, tumbling as it were over its head, so that then the feet are uppermost, and the face towards the mother's great gut; and this turning of the infant in this

manner, with its head downwards, towards the latter end of a woman's reckoning, is so ordered by nature, that it may be thereby the better disposed for its passage into the world at the time of its mother's labour, which is not then far off (and, indeed, some children turn not at all until the very time of birth); for in this posture all its joints are most easily extended in coming forth; for, by this means the arms and legs cannot hinder its birth, because they cannot be bended against the inward orifice of the womb; and the rest of the body being very supple, passeth without any difficulty after the head, which is hard and big, being past the birth. It is true, there are divers children that lie in the womb in another posture, and come to birth with their feet downwards, especially if there be twins; for then by the different motions they do so disturb one another, that they seldom come both in the same posture at the time of labour, but one will come with the head, and another with the feet, or perhaps lie across; and sometimes neither of them will come right. But, however the child may be situated in the womb, or in whatever posture it presents itself at the time of birth, if it be not with its head forwards, as I have before described, it is always against nature, and the delivery will occasion the more pain and danger, and require

greater care and skill from the midwife, than when the labour is more natural.

CHAP. IV.

A Guide for Women in Travail, showing what is to be done when they fall in Labour, in order to their Delivery.

The end of all that we have been treating of is, the bringing forth a child into the world with safety both to the mother and the infant, as the whole time of a woman's pregnancy may very well be termed a kind of labour; for, from the time of her conception to the time of her delivery, she labours under many difficulties, is subject to many distempers, and in continual danger, from one effect or other, till the time of birth comes; and when that comes, the greatest labour and travail come along with it, insomuch that then all the other labours are forgotten, and that only is called the time of her labour; and to deliver her safely is the principal business of the midwife; and to assist her therein, shall be the chief design of this chapter. The time of the child's being ready for its birth, when nature endeavours to cast it forth, is that which is properly the time

of a woman's labour; nature then labouring to be eased of its burden. And since many child-bearing women, (especially the first child) are often mistaken in their reckoning, and so, when they draw near their time, take every pain they meet with for their labour, which often proves prejudicial and troublesome to them, when it is not so; I will in the first section of this chapter, set down some signs, by which a woman may know when the true time of her labour is come.

SECT. I. *The Signs of the true Time of a Woman's Labour.*

WHEN women with child, especially of their first, perceive any extraordinary pains in the abdomen, they immediately send for their midwife, as taking it for their labour; and then if the midwife be not a skilful and experienced woman, to know the time of labour, but takes it for granted without further inquiry (for some such there are), and so goes about to put her into labour before nature is prepared for it, she may endanger the lives of both mother and child, by breaking the amnios and chorion. These pains, which are often mistaken for labour, are removed by warm cloths laid to the abdomen, and the application of a clyster or two, by which those pains which precede a true

labour are rather furthered than hindered. There are also other pains incident to a woman in that condition from a flux of the abdomen, which are easily known by the frequent stools that follow them.

The signs, therefore, of labour, some few days before, are, that the woman's abdomen, which before lay high, sinks down, and hinders her from walking so easily as she used to do; also there flow from the womb slimy humours, which nature has appointed to moisten and smooth the passage, that its inward orifice may be the more easily dilated when there is occasion; which, beginning to open at this time, suffers that slime to fall away, which proceeds from the glandules, called *prostata*. These are signs preceding the labour; but when she is presently falling into labour, the signs are, great pains about the region of the reins and loins, which, coming and retreating by intervals, are answered in the bottom of the abdomen by congruous throes, and sometimes the face is red and inflamed, the blood being much heated by the endeavours a woman makes to bring forth her child; and likewise, because during these strong throes her respiration is intercepted, which causes the blood to have recourse to her face; also her privy parts are swelled by the infant's head lying in the birth, which, by often thrusting, causes those parts to descend outwards. She

is much subject to vomiting, which is a sign of labour and speedy delivery, though by ignorant people thought otherwise; for good pains are thereby excited by the sympathy there is between the womb and the stomach. Also when the birth is near, women are troubled with a trembling in the thighs and legs, not with cold, like the beginning of an ague fit, but with the heat of the whole body; though, it must be granted, this does not happen always. Also, if the humours which then flow from the womb are discoloured with blood, which the midwives call *shows*, it is an infallible mark of the birth being near. And if then the midwife puts up her fingers into the neck of the womb, she will find the inner orifice dilated; at the opening of which, the membranes of the infant, containing the water, present themselves, and are strongly forced down with each pain she hath; at which time one may perceive them sometimes to resist, and then again press forward the finger, being more or less hard and extended, according as the pains are stronger or weaker. These membranes, with the waters in them, when they are before the head of the child, which the midwives call *the gathering of the waters*, resemble to the touch of the finger those eggs which have no shell, but are covered only with a simple membrane. After this, the pains still redoubling, the membranes are broken by a strong

impulsion of the waters, which flow away, and then the head of the infant is presently felt naked, and presents itself at the inward orifice of the womb. When these waters come thus away, then the midwife may be assured the birth is very near, this being the most certain sign there can be; for the *amnios alantois*, which contained those waters, being broken by the pressing forward of the birth, the child is no better able to subsist long in the womb afterwards, than a naked man in a heap of snow. Now, these waters, if the child comes presently after them, facilitate the labour, by making the passage slippery; and, therefore, let no midwife (as some have foolishly done) endeavour to force away the water, for nature knows best when the true time of the birth is, and therefore retains the water till that time. But if by accident the water breaks away too long before the birth, then such things as will hasten it may be safely administered, and what these are I will show in another section.

SECT. II. *How a Woman ought to be ordered when the Time of her Labour is come.*

WHEN it is known that the true time of her labour is come by the signs laid down in the foregoing section, of which those that are most to be relied on are pains and strong throes in

the abdomen, forcing downwards towards the womb, and a dilation of the inward orifice, which may be perceived by touching it with the finger, and the gathering of the waters before the head of the child, and thrusting down of the membranes which contain them; through which, between the pains, one may in some manner with the finger discover the part which presents (as we said before), especially if it be the head of the child, by its roundness and hardness; I say, if these things concur and are evident, the midwife may be sure it is the time of the woman's labour; and care must be taken to get all things necessary to comfort her in that time. And the better to help her, be sure to see she be not strait-laced: you may also give her one strong clyster or more, if there be occasion, provided it be done at the beginning, and before the child be too forward; for it will be difficult for her to receive them afterwards. The benefit accruing thereby will be, that they excite the gut to discharge itself of its excrements, that so, the rectum being emptied, there may be more space for the dilation of the passage; likewise to cause the pains to bear the more downward, through the endeavours she makes when she is at stool; and in the meantime, all other necessary things for her labour should be put in order, both for the mother and the child. To this end, some get a midwife's

stool; but a pallet-bed, girded, is much the best way, placed near the fire, if the season require; which pallet ought to be placed, that there may be easy access to it on every side, that the woman may be more readily assisted as there is occasion.

If the woman abounds with blood, to bleed her a little may not be improper, for thereby she will both breathe the better, and have her breasts more at liberty, and likewise the more strength to bear down her pains; and this may be done without danger, because the child being about that time ready to be born, has no more need of the mother's blood for its nourishment: besides, this evacuation does many times prevent her having a fever after delivery. Also, before her delivery, if her strength will permit, let her walk up and down her chamber; and that she may have strength so to do, it will be necessary to give her some good strengthening things, such as jelly, broth, new-laid eggs, or some spoonsful of burnt wine; and let her by all means hold out her pains, bearing them down as much as she can at the time when they take her; and let the midwife from time to time touch the inward orifice with her finger, to know whether the waters are ready to break, and whether the birth will follow soon after. Let her also anoint the woman's privities with emollient oil, hog's grease, and fresh butter, if

she find they are hard to be dilated. Let the midwife likewise be all the time near the labouring woman, and diligently observe her gestures, complaints, and pains; for by this she may guess pretty well how her labour advanceth, because when she changes her ordinary groans into loud cries, it is a sign the child is very near the birth; for at that time her pains are greater and more frequent. Let the woman, likewise, by intervals, rest herself on the bed, to regain her strength, but not too long, especially if she be little, short, and thick; for such women have always worse labour, if they lie long on their beds in their travail. It is better, therefore, that she walk about her chamber as much as she can, the woman supporting her under the arms, if it be necessary; for by this means, the weight of the child causeth the inward orifice of the womb to dilate the sooner than in bed; and if her pains be stronger and more frequent, her labour will not be near so long.

Let not the labouring woman be concerned at those qualms and vomitings which perhaps she may find come upon her, for they will be much for her advantage in the issue, however uneasy she may be for the time, as they further her throes and pains by provoking downwards.

When the waters of the child are ready and

gathered (which may be perceived through the membranes to present themselves to the inward orifice) to the bignesss of the whole dilation, the midwife ought to let them break of themselves, and not, like some hasty midwives, who being impatient of the woman's long labour, break them, intending thereby to hasten their business, when instead thereof they retard it; for, by the too hasty breaking of these waters (which nature designed to cause the infant to slide forth more easy) the passage remalns dry, by which means the pains and throes of the labouring woman are less efficacious to bring forth than they would otherwise have been. It is therefore much the better way to let the waters break of themselves; after which the midwife may with ease feel the child by that part which first presents, and thereby discern whether it comes right, that is, with the head foremost, for that is the most proper and natural way of its birth. If the head comes right, she will find it round, big, hard, and equal; but if it be any other part, she will find it unequal, rugged, and soft or hard, according to the nature of the part it is. And this being the true time when a woman ought to be delivered, if nature be not wanting to perform its office; therefore, when the midwife finds the birth thus coming forward, let her hasten to assist and deliver it,

for it ordinarily happens soon after, if it be natural.

But if it happens, as sometimes it may, that the waters break away too long before the birth, in such a case those things that hasten nature may be safely administered. For which purpose, make use of pennyroyal, dittany, juniper-berries, red coral, betony, and feverfew, boiled in white wine, and give a draught of it; or it would be much better to take the juice of it when it is in its prime, which is in May, and having clarified it, make it into syrup, with double its weight of sugar, and keep it all the year, to use when occasion calls for it: mugwort used in the same manner, is also good in this case; also, a drachm of cinnamon powder, given inwardly, profits much in this case; and so does tansey, broiled, and applied to the privities; or an oil of it, so made and used, as you were taught before. The following prescriptions are very good to speedy deliverance to women in travail.

1. A decoction of white wine made in savory, and drank.

2. Take wild tansey, or silver weed, bruise it, and apply it to the woman's nostrils.

3. Take date stones, and beat them to powder, and let her take half a drachm of them in white wine at a time.

4. Take parsley and bruise it, and press out

the juice, and dip a linen cloth in it, and put it up so dipped into the mouth of the womb: it will presently cause the child to come away, though it be dead, and will bring away the after-burden. Also, the juice of parsley is a thing of so great virtue (especially stone parsley) that being drank by a woman with child it cleanseth not only the womb, but also the child in the womb, of all gross humours.

5. A scruple of castorum in powder, in any convenient liquor, is very good to be taken in such a case; and so also is two or three drops of spirit of castorum in any convenient liquor; also eight or nine drops of spirit of myrrh, given in any convenient liquor, gives speedy deliverance.

6. Give a woman in such a case another woman's milk to drink: it will cause speedy delivery, and almost without any pain.

7. The juice of leeks, being drank with warm water, highly operates to cause speedy delivery.

8. Take peony seeds, and beat them into powder, and mix the powder with oil, with which oil anoint the loins and privities of the woman and child; it will give her deliverance speedily, and with less pain than can be imagined.

9. Take a swallow's nest, and dissolve it in water, strain it, and drink it warm; it gives delivery with great speed and much ease.

Note this also in general, that all things that move the terms, are good for making the delivery easy; such as myrrh, white amber in white wine, or lily-water, two scruples or a drachm; or cassia lignea, dittany, each a drachm; cinnamon half a drachm, saffron a scruple; give a drachm: or take borax mineral a drachm; and give it in sack: or take cassia lignea a drachm: dittany, amber, of each a drachm; cinnamon, borax, of each a drachm and a half; saffron a scruple; and give her half a drachm: or give her some drops of oil of hazel in convenient liquor; or two or three drops of oil of cinnamon in vervain water. Some prepare the secundine thus:—Take the navel-string and dry it in an oven, take two drachms of the powder, cinnamon a drachm, saffron half a scruple, with juice of savin make trochisks; give two drachms: or wash the secundine in wine, and bake it in a pot; then wash it in endive water and wine; take half a drachm of it: long pepper, galangal, of each half a drachm: plaintain and endive seed, of each half a drachm; lavender seed four scruples; make a powder: or take laudanum two drachms; storax, calamite, benzion, of each half a drachm; musk ambergris, each six grains; make a powder, or trochisks for a fume. Or use pessaries to provoke the birth; take galba-

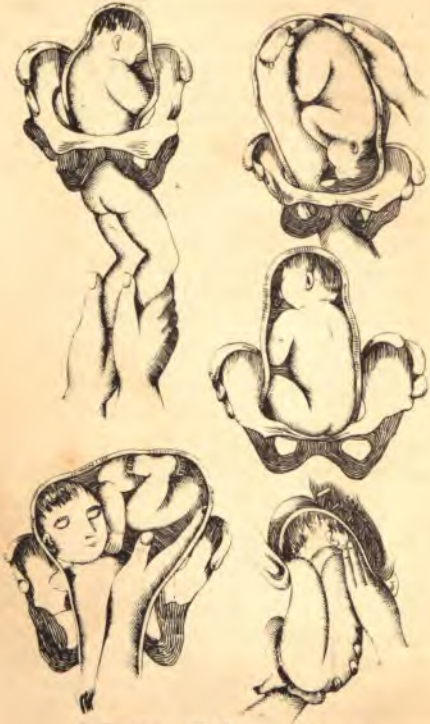
num dissolved in vinegar, an ounce; myrrh two drachms; with oil of oat make a pessary.

An Ointment for the Navel.

Take oil of keir two ounces, juice of savine an ounce, of leeks and mercury each half an ounce; boil them to the consumption of the juice; add galbanum dissolved in vinegar half an ounce; myrrh two drachms, storax liquid a drachm; round bitwort, sowbread, cinnamon, saffron a drachm; with wax make an ointment, and apply it.

If the birth be retarded through the weakness of the mother, refresh her by applying wine and soap to the nose; confect. alkermas diamarg.

These things may be applied to help nature in her delivery, when the child comes to the birth the right way, and yet the birth be retarded: but if she finds the child comes the wrong way, and is not able to deliver the woman as she ought to be, by helping nature, and saving both mother and child (for it is not enough to lay a woman, if it might be done any other way with more safety and ease, and less hazard both to woman and child), then let her send speedily for better and more able help; and not as I once knew a midwife do, who, when a woman she was to deliver had hard



Process of Delivery.

labour, rather than a man-midwife should be sent for, undertook to deliver the woman herself (though told it was a man's business), and in her attempting it brought away the child but left the head in the mother's womb; and had not a man-midwife been presently sent for, the mother had lost her life as well as the child: such persons may rather be termed butchers than midwives. But supposing the woman's labour to be natural, I will next show what the midwife ought to do, in order to her delivery.

CHAP. V.

OF NATURAL LABOUR; WHAT IT IS; AND WHAT THE MIDWIFE IS TO DO IN SUCH A LABOUR.

SECT. I. *What Natural Labour is.*

THERE are four things which denominate a woman's natural labour; the first, that it be at the full time; for, if a woman comes before her time, it cannot be termed natural labour; neither will it be so easy as though she had completed her nine months. The second thing is, that it be speedy, and without any ill accident: for, when the time of her birth is come, nature is not dilatory in the bringing of it forth,

without some ill accident intervene, which renders it unnatural. The third is, that the child be alive; for all will grant, that the being delivered of a dead child is very unnatural. The fourth thing requisite to a natural birth is, that the child come right: for if the position of the child in the womb be contrary to what is natural, the event will prove it so, by making that which should be a time of life, the death of both the mother and the child.

Having thus told you what I mean by natural labour, I shall next show how the midwife is to proceed therein, in order to the woman's delivery. When all the foregoing requisites concur, and after the waters be broke of themselves, let there rather be a quilt laid upon the pallet bedstead than a feather bed, having thereon linen, and cloths in many folds, with other such things as are necessary, and that may be changed according to the exigency requiring it, so that the woman may not be incommoded with the blood, waters, and other filth which are voided in labour. The bed ought so to be ordered, that the woman, being ready to be delivered, should lie on her back upon it, having her body in a convenient posture; that is, her head and breast a little raised, so that she be between lying and sitting; for being so placed, she is best capable of breathing, and likewise will have more strength

to bear her pains than if she lay otherwise, or sunk down in bed. Being so placed, she must spread her thighs abroad, folding her legs a little towards her loins, somewhat raised by a small pillow underneath, to the end her groin should have more liberty to retire back; and let her feet be stayed against some firm thing: besides this, let her take hold of some of the good women attending her with her hands, that she may the better stay herself during her pains. She being thus placed at the side of her bed, having her midwife at hand, the better to assist as nature may require, let her take courage, and help her pains the best she can, bearing them down when they take her, which she must do by holding her breath, and forcing them as [illegible] as possible, in like manner as when [illegible] stool; for by such straining, the [illegible] midriff, [illegible] strongly [illegible] necessarily [illegible] the [illegible] in it. [illegible] endeavour [illegible] her to [illegible] her [illegible] is no [illegible]

to examine whether there be more children in the womb; for sometimes a woman may have twins that expected it not; which the midwife may easily know, by the continuance of the pains after the child is born, and the bigness of the mother's abdomen. But the midwife may be sure of it, if she puts her hand up the entry of the womb, and finds there another watery gathering, and a child in it presenting to the passage; and if she finds it so, she must have a care of going to fetch the after-birth, till the woman be delivered of all the children she is pregnant with. Wherefore the first string must be cut, being first tied with a thread three or four double, and fasten the other end with a string to the woman's thighs; and then removing the child already born, she must take care to deliver her of the rest, observing all the circumstances as with the first; after which it will be necessary to fetch away the after-birth or births. But of that I shall treat in another section; and first show what is to be done to the new-born infant.

SECT. II. *Of the Cutting of the Child's Navel-String.*

THOUGH this is accounted by many but a trifle, yet great care is to be taken about it; and it shows none of the least art and skill of a mid-

wife to do it as it should be; and that it may be so done, the midwife ought to observe, 1. The time. 2. The place. 3. The manner. 4. The event.

1. The time is, as soon as ever the infant comes out of the womb, whether it brings part of the after-burden with it or not; for sometimes the child brings into the world a piece of the amnios upon its head, and is what midwives call the *caul*, and ignorantly attribute some extraordinary virtue to the child that is so born: but this opinion is only the effect of their ignorance; for when the child is born with such a crown (as some call it) upon its brows, it generally betokens weakness, and denotes a short life. But to proceed to the matter in hand. As soon as the child is come into the world, it should be considered whether it is weak or strong; and if it be weak, let the midwife gently put back part of the vital and natural blood into the body of the child by its navel; for that recruits a weak child (the vital and natural spirits being communicated by the mother to the child by its navel-string); but if the child be strong, the operation is needless. Only let me advise you, that many children that are born seemingly dead, may be soon brought to life again, if you squeeze six or seven drops of blood out of that part of the navel-

string which is cut off, and give it to the child inwardly.

2. As to the place in which it should be cut, that is, whether it should be cut long or short, it is that which authors can scarcely agree in, and which many midwives quarrel about; some prescribing it to be cut at four fingers' breadth, which is, at best, but an uncertain rule, unless all fingers were of one size.

3. As to the manner in which it must be cut: let the midwife take a brown thread, four or five times double, of an ell long or thereabouts, tied with a single knot at each of the ends, to prevent their entangling; and with this thread so accommodated (which the midwife must have in readiness before the woman's labour, as also a good pair of scissors, that no time may be lost) let her tie the string within an inch of the abdomen with a double knot, and, turning about the end of the thread, let her tie two more on the other side of the string, reiterating it again, if it be necessary; then let her cut off the navel another inch below the ligatures, towards the after-birth, so that there only remains but two inches of the string, in the midst of which will be the knot we speak of, which must be so close knit as not to suffer a drop of blood to squeeze out of the vessels; but care must be taken, not to knit it so strait as to cut it in two, and therefore, the thread must be pretty thick,

and pretty strait cut, it being better too strait than too loose; for some children have miserably lost their lives, with all their blood, before it was discovered, because the navel-string was not well tied; therefore great care must be taken that no blood squeeze through; for if there do, a new knot must be made with the rest of the string. You need not fear to bind the navel-string very hard, because it is void of sense, and that part which you leave falls off in a very few days, sometimes in six or seven, or sooner, but never tarries longer than eight or nine.

4. The last thing I mentioned was the event or consequence, or what follows cutting the navel-string. As soon as the navel-string is cut off, apply a little cotton or lint to the place to keep it warm, lest the cold enter into the body of the child, which it most certainly will do, if you have not bound it hard enough. If the lint or cotton you apply to it be dipped in the oil of roses, it will be the better; and then put another small rag three or four times double upon the abdomen: upon the top of all, put another small bolster; and then swathe it with a linen swathe, four fingers broad, to keep it steady, lest by moving too much, or by being continually stirred from side to side, it comes to fall off before the navel-string which you left remaining is falling off. It is the usual

custom of midwives to put a piece of burnt rag to it, which we commonly call tinder; but I would advise them to put a little ammoniac to it, because of its drying quality.

SECT. III. *How to bring away the After-burden.*

A WOMAN cannot be said to be fairly delivered, though the child be born, till the after-burden be also taken from her; herein differing from most animals, who, when they have brought forth their young cast forth, nothing else but some water, and the membranes which contained them. But women have an after-labour, which sometimes proves more dangerous than the first; and how to bring it safely away, without prejudice to her, shall be my business to show in this section.

As soon as the child is born, before the midwife either ties or cuts the navel-string, lest the womb should close, let her take the string and wind it once or twice about one or two of the fingers of her left hand joined together, the better to hold it, with which she may draw it moderately, and with the right hand she may only take a single hold of it above the left near the privities, drawing likewise with that very gently, resting the while the forefinger of the the string towards the same hand, extended and

stretched forth along the entrance of the vagina, always observing, for greater facility, to draw it from the side where the burden cleaves least; for, in so doing, the rest will separate the better: and special care must be taken that it be not drawn forth with too much violence, lest by breaking the string near the burden the midwife be obliged to put the whole hand into the womb to deliver the woman; and she need to be a very skilful person that undertakes it, lest the womb, to which this burden is sometimes very strongly fastened, be drawn away with it, as it has sometimes happened. It is, therefore, best to use such remedies as may assist nature. And here take notice, that what brings away the birth, will also bring away the after-birth. And therefore, for effecting this work, I will lay down the following rules.

1. Use the same means in bringing away the after-birth that you made use of to bring away the birth; for the same care and circumspection are needful now that were then.

2. Considering the labouring woman cannot but be much spent by what she has already undergone in bringing forth the infant; be therefore sure to give her something to comfort her. And in this case good jelly broths, also a little wine and toast in it, and other comforting things, will be very necessary.

3. A little hellebore in powder, to make her sneeze, is in this case very proper.

4. Tansey and the stone ætites, applied as before directed, are also of good use in this case.

5. If you take the herb vervain, and either boil it in wine, or make a syrup with the juice of it, which you may do by adding to it double its weight of sugar, (having clarified the juice before you boil it), a spoonful of that given to the woman is very efficacious to bring away the secundine; and featherfew and mugwort have the same operation, taken as the former.

6. Alexander boiled in wine, and the wine drank, also sweet servile, sweet cicily, angelica roots, and musterwort, are excellent remedies in this case.

7. Or, if this fail, the smoke of marigolds, received up a woman's privities by a funnel, has been known to bring away the after-birth, even when the midwife let go her hand.

8. Boil mugwort in water till it be very soft; then take it out, and apply it in the manner of a poultice to the navel of the labouring woman, and it instantly brings away the birth and after-birth. But special care must be taken to remove it as soon as they come away, lest by its longer tarrying it should draw away the womb also.

SECT. IV. *Of Laborious and Difficult Labours, and how the Midwife is to proceed therein.*

THERE are three sorts of bad labours, all painful and difficult, but not all properly unnatural. It will be necessary therefore to distinguish these.

The *first* of these labours is that wherein the mother and child suffer very much by extreme pain and difficulty, even though the child come right; and this is distinguishably called the laborious labour.

The *second* is that which is difficult, and differs not much from the former, except that, besides those extraordinary pains, it is generally attended with some unhappy accident, which by retarding the birth, causes the difficulty: but these difficulties being removed, it accelerates the birth, and hastens the delivery.

Some have asked, what is the reason that women bring forth their children with so much pain? I answer, the sense of feeling is distributed to the whole body by the nerves; and the mouth of the womb being so strait that it must of necessity be dilated at the time of the woman's delivery, the dilating thereof stretches the nerves, and from thence comes the pain. And therefore the reason why some women have more pain in their labours than others,

proceeds from their having the mouth of the matrix more full of nerves than others. The best way to remove those difficulties that occasion hard pains and labour, is to show first from whence they proceed. Now the difficulty of labour proceeds either from the mother, or child, or both.

From the mother, by reason of the indisposition of the body, or from some particular part only, and chiefly the womb, as when the woman is weak, and the mother is not active to expel the burden, or from weakness or disease, or want of spirits; or it may be from some strong passion of the mind with which she was once possessed; she may be too young, and so may have the passage too strait; or too old, and then, if it be her first child, because her pains are too dry and hard, and cannot be easily dilated, as happens also to them which are too lean; likewise those who are either small, short or deformed, as crooked women, who have not breath enough to help their pains, and to bear them down, and persons that are crooked having sometimes the bones of the passage not well shaped. The cholic also hinders labour, by preventing the true pains; and all great and active pains, as when the woman is taken with a violent fever, a [illegible] flooding, frequent convulsions, bloody [illegible] any other great distemper. Also, ex-

crements retained cause much difficulty, and so does a stone in the bladder; or when the bladder is full of urine, without being able to void it; or when the woman is troubled with great and painful piles. It may also be from the passages, when the membranes are thick, the orifice too strait, and the neck of the womb not sufficiently open, the passages pressed and strained by tumours in the adjacent parts, or when the bones are too firm, and will not open, which very much endangers the mother and child; or when the passages are not slippery, by reason of the waters having broke too soon, or the membranes being too thin. The womb may also be out of order with respect to its bad situation, or conformation, having its neck too strait, hard, and callous, which may easily be so naturally, or may come by accident, being many times caused by a tumor, an imposthume, ulcer, or superfluous flesh.

As to hard labour occasioned by the child, it is when the child happens to stick to a mole, or when it is so weak it cannot break the membranes; or if it be too big all over, or at the head only, or if the natural vessels are twisted about its neck; when the belly is hydropsical; or when it is monstrous, having two heads, or joined to another child; also, when the child is dead, or so weak that it can

contribute nothing to its birth; likewise when it comes wrong; or when there are two or more. And to all these various difficulties there is oftentimes one more, and that is, the ignorance of the midwife, who, for want of understanding in her business, hinders nature in her work instead of helping her.

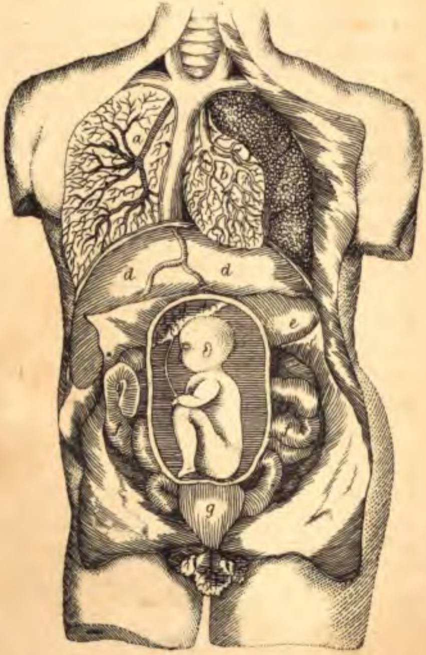
Having thus looked into the cases of hard labour, I will now show the industrious midwife how she may minister some relief to the labouring woman under these difficult circumstances. But it will require judgment and understanding in the midwife, when she finds a woman in difficult labour, to know the particular obstruction, or cause thereof, that so a suitable remedy may be applied; as, for instance, when it happens by the mother's being too young or too strait, she must be gently treated, and the passages anointed with oil, hog's lard, or fresh butter, to relax and dilate them the easier, lest there should happen a rupture of any part when the child is born; for sometimes the peritoneum breaks, with the skin from the privities of the fundament.

But if the woman be in years with her first child, let her lower parts be anointed to mollify the inward orifice, which, in such a case being more hard and callous, does not easily yield to the distention of labour, which is the true cause why such women are longer in labour,

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The Action of Quickening.

and also why their children, being forced against the inward orifice of the womb (which, as I have said, is a little callous) are born with great humps and bruises on their heads.

Those women that are very small and misshapen, should not be put to bed, at least, till their waters are broke, but rather kept upright, and assisted to walk about the chamber, by being supported under the arms; for, by that means, they will breathe more freely, and mend their pains better than on the bed, because there they lie all on a heap. As for those that are very lean, and have hard labour from that cause, let them moisten the parts with oil and ointments, to make them more smooth and slippery, that the head of the infant and the womb be not so compressed and bruised by the hardness of the mother's bones which form the passage. If the cause be weakness, she ought to be strengthened, the better to support her pains; to which end give her good jelly broths, and a little wine with a toast in it. If she fears her pains, let her be comforted, assuring her that she will not endure many more, but be delivered in a little time. But if her pains be slow and small, or none at all, they must be provoked by frequent and pretty strong clysters; let her walk about her chamber, that so the weight of the child may help them forward. If she flood, or have strong convulsions, she

must be then helped by a speedy delivery; the operation I shall relate in the section of unnatural labours. If she be costive, let her use clysters, which may also help to dispel the cholic, at those times very injurious, because attended with useless pains, and because such bear not downward, and so help not to forward the birth. If she find an obstruction or stoppage of the urine, by reason the womb bears too much on the bladder, let her lift up her abdomen a little with her hand, and try if by that she receives any benefit; if she finds she does not, it will be necessary to introduce a catheter into her bladder, and thereby draw forth her urine. If the difficulty be from the ill posture of the woman, let her be placed otherwise, in a posture more suitable and convenient for her; also if it proceed from the indisposition of the womb, as from its oblique situation, &c. it must be remedied, as well as it can, by the placing her body accordingly; or, if it be a vicious conformation, having the neck too hard, too callous, and too strait, it must be anointed with oils and ointments, as before directed. If the membranes be so strong as that the waters do not break in due time, they may be broken with the fingers, if the midwife be first well assured that the child is forward in the passage, and ready to follow presently after; or else, by the breaking of the waters too soon, the child

may remain in danger of remaining dry a long time; to supply which defect, you may moisten the parts with fomentations, decoctions, and emollient oils: which yet is not half so well as when nature does her work in her own time, with the ordinary slime and water. These membranes sometimes do press forth with the waters three or four fingers' breadth out of the body before the child, resembling a bladder full of water; but there is then no great danger to break them, if they be not already broken; for when the case is so, the child is always in readiness to follow, being in the passage; but let the midwife be very careful not to pull it with her hand, lest the after-burden be thereby loosened before its time, for it adheres thereto very strongly. If the navel-string happen to come first, it must presently be put in again, and kept so, if possible, or otherwise the woman must be immediately delivered. But if the after-burden should come first, it must not be put up again by any means; for the infant having no further occasion for it, it would be but an obstacle if it were put up; in this case it must be cut off, having tied the navel-string, and afterwards draw forth the child with all the speed that may be, lest it be suffocated.

Sect. V. *Of Women labouring with a dead Child.*

When the difficulty of labour arises from a dead child, it is a case of great danger to the mother, and great care ought to be taken therein; but before any thing be done, the midwife ought to be well assured the child is dead indeed, which may be known by these signs.

1. The breast suddenly slacks, or falls flat, or bags down. 2. A great coldness possesses the abdomen of the mother, especially about the navel. 3. Her urine is thick, and a filthy stinking settles at the bottom. 4. No motion of the child can be perceived; for the trial whereof, let the midwife put her hand in warm water, and lay it upon the abdomen; for that, if it is alive, will make it stir. 5. She is very subject to dream of dead men, and be affrighted therewith. 6. She has extravagant longings to eat such things as are contrary to nature. 7. Her breath stinks, though not used so to do. 8. When she turns herself in bed, the child sways that way like a lump of lead.

These things being carefully observed, the midwife may make a judgment whether the child be alive or dead, especially if the woman take the following prescription: "Take half a pint of white wine and burn it, and add there-

to half an ounce of cinnamon, but no other spice whatever; and when she has drank it, if her travailing pains come upon her, the child is certainly dead; but if not, the child may possibly be either weak or sick, but not dead; this will bring her pains upon her, if it be dead, and will refresh the child, and give her ease if it be living; for cinnamon refresheth and strengtheneth the child.

Now, if upon trial, it be found that the child is dead, let the mother do all she can to forward the delivery, because a dead child can be nowise helpful therein. It will be necessary, therefore, that she make some comfortable things to prevent her fainting, by reason of the putrid vapours ascending from the dead child. And in order to her delivery, let her take the following herbs boiled in white wine, (or at least as many of them as you can get), viz. dittany, betony, pennyroyal, sage, featherfew, centuary, ivy leaves, and berries. Let her also take sweet basil, in powder, and half a drachm at a time, in white wine; let her privities be also anointed with the juice of the garden-tansey. Or take the tansey in the summer, when it can be most plentifully had, and before it runs up to the flower, and having bruised it well, boil it in oil till the juice of it be consumed. If you set it in the sun, after you have mixed it with oil, it will be more effectual.

This an industrious midwife, who would be prepared against all events, ought to have always by her. As to the manner of her delivery, the same methods must be used as are mentioned in the section of natural labour. And here again I cannot but commend the stone ætites, held near the privities, whose magnetic virtue renders it exceedingly necessary on this occasion, for it draws the child any way, with the same facility that the loadstone draws iron.

Let the midwife also make a strong decoction of hyssop with water, and let the woman drink it very hot, and it will in a little time bring away the dead child.

If, as soon as she is delivered of the dead child, you are in doubt that part of the after-birth is left behind in the body (for in such cases as these, many times, it rots, and comes away piece-meal), let her continue drinking the same decoction till her body be cleansed.

A decoction made of the herb muster-wort, used as you did the decoction of hyssop, works the same effect. Let the midwife also take roots of pollodum, and stamp them well; warm them a little, and bind them on the soles of her feet, and it will soon bring away the child, either dead or alive.

The following medicines likewise are such as stir up the expulsive faculty; but in this case

they must be stronger, because the motion of the child ceaseth.

Take savine, round birthwort, trochisks of myrrh, afaram roots, cinnamon, saffron, each half a drachm; make a powder, give a drachm.

Or she may purge first, and then apply an emollient, anointing her about the womb with oil of lilies, sweet almonds, camomile, hen and goose-grease. Also foment, to get out the child, with a decoction of mercury, orris, wild cucumbers, sæcus, broom flowers. Then anoint the privities and loins with ointment of sow-bread. Or, take coloquintida, agaric, birthwort, of each a drachm; make a powder; add ammoniacum dissolved in wine, ox gall, each two drachms; with oil of keir make an ointment. Or this pessary:

Take birthwort, orris, black hellebore, coloquintida, myrrh, each a drachm; powdered ammoniacum dissolved in wine, ox-gall, each two drachms. Or make a fume with an ass's hoof burnt, or gallianum, or castor, and let it be taken in with a funnel.

To take away pains, and strengthen the parts, foment with the decoction of mugwort, mallows, rosemary, with wood myrtle, St. John's wort, each half an ounce, spermatic two drachms, deer's suet an ounce; with wax make an ointment. Or,

Take wax six ounces, spermaceti an ounce; melt them, dip flax therein, and lay it all over her abdomen.

If none of these things will do, the last remedy is to use surgery, and then the midwife ought without delay to send for an expert and able man-midwife, to deliver her by manual operation; of which I shall treat more in the next chapter.

CHAP. VI.

Of Unnatural Labour.

In showing the duty of a midwife, when the child-bearing woman's labour is unnatural, it will be requisite to show, in the first place, what I mean by unnatural labour; for that women do bring forth children in pain and sorrow is natural and common to all. Therefore, that which I call unnatural is, when the child comes to the birth in a contrary posture to that which nature ordained, and in which the generality of children come into the world.

The right and natural birth is, when the child comes with its head first; and yet this is too short a definition of a natural birth: for if any part of the head but the crown comes first, so

...the body follows not in a straight line, it ... wrong and difficult birth, even though the head comes first. Therefore, if the child comes with its feet first, or with the side across, it is quite contrary to nature, or, to speak more plainly, that which I call unnatural.

Now, there are four general ways a child may come wrong. 1. When any of the fore parts of the body first present themselves. 2. When, by an unhappy transportation, any of the hinder parts of the body first present themselves. 3. When either of the sides, or, 4. the feet present themselves first. To these the different wrong postures that a child can present itself may be reduced.

SECT. I. *How to deliver a Woman of a Dead Child, by Manual Operation.*

When any manual operation is necessary, let the operator acquaint the woman of the absolute necessity there is for such an operation; and that, as the child has already lost its life, there is no other way left for the saving of hers. Let him also inform her, for her encouragement, that he doubts not, with the divine blessing, to deliver her safely; and that the pain arising thereby will not be so great as she fears. Then let him stir up the woman's pains by giving her some sharp clyster, to excite her throes

the womb with oil or fresh butter, if necessary, that so with more ease he may introduce his hand, which must also be anointed; and having, by the signs before-mentioned, received satisfaction that the child is dead, he must do his endeavours to fetch it away as soon as he possibly can. If the child offer the head first,

he must gently put it back, until he hath liberty to introduce his hand quite into the womb; then sliding it along, to find the feet, let him draw it forth by them, being very careful to keep the head from being locked into the passage, and that it be not separated from the body; which may be effected the more easily, because the child being very rotten and putrified, the operator needs not be so mindful to keep the breast and face downwards as he is in living births. But if, notwithstanding all these precautions, by reason of the child's putrefaction, the head should be separated and left behind in the womb, it must be drawn forth according to the directions which have been given in the third section of this chapter. But when the head, coming first, is so far advanced that it cannot well be put back, it is better to draw it forth so, than to torment the woman too much by putting it back to turn it and bring it by the feet: but the head being a part round and slippery, it may so happen that the operator cannot take hold of it by reason of its moisture, nor put them up to the side of it, because the passage is filled with its bigness; he must therefore take a proper instrument, and put it up as far as he can, without violence, between the womb and the child's head, observing to keep the point of it towards the head (for the child being dead before, there can be no danger

he must gently put it back, until he hath liberty to introduce his hand quite into the womb; then sliding it along, to find the feet, let him draw it forth by them, being very careful to keep the head from being locked into the passage, and that it be not separated from the body; which may be effected the more easily, because the child being very rotten and putrified, the operator needs not be so mindful to keep the breast and face downwards as he is in living births. But if, notwithstanding all these precautions, by reason of the child's putrefaction, the head should be separated and left behind in the womb, it must be drawn forth according to the directions which have been given in the third section of this chapter. But when the head, coming first, is so far advanced that it cannot well be put back, it is better to draw forth so, than to t[illegible]ment the woman too much by putting [illegible] turn it and bring it by the feet; [illegible]eing a part round and slippe[illegible] that the operator canno[illegible] nois[illegible] use [illegible] must [illegible] it it [illegible] een [illegible] to [illegible] the [illegible] danger

in the operation,) and let him fasten it there, giving it hold upon one of the bones of the skull, that it may not slide; and after it is well fixed in the head, he may therewith draw it forth, keeping the ends of the fingers of his left hand flat upon the opposite side, the better to help to disengage it, and by wagging it a little, to conduct it directly out of the passage, until the head be quite born; and then taking hold of it with the hands only, the shoulders may be drawn into the passage, and so sliding the fingers of both hands under the arm-pits, the child may be quite delivered; and then the after-burden fetched, to finish the operation, being careful not to pluck the navel-string too hard, lest it break, as often happens, when it is corrupt.

If the dead child comes with the arm up to the shoulder so extremely swelled that the woman must suffer too great violence to have it put back, it is then (being first well assured the child is dead) best to take it off by the shoulder points, by twisting three or four times about, which is very easily done by reason of the softness and tenderness of the body. After the arm is so separated, and no longer possesses the passage, the operator will have more room to put up his hand into the womb, to fetch the child by the feet and bring it away.

But although the operator be sure the child

is dead in the womb, yet he must not therefore presently use instruments, because they are never to be used but when hands are not sufficient, and there is no other remedy to prevent the woman's danger, or to bring forth the child any other way; and the judicious operator will choose that way which is the least hazardous and most safe.

Sect. II. *How a Woman must be Delivered, when the Child's Feet come first.*

There is nothing more obvious to those whose business it is to assist labouring women, than that the several unnatural postures in which children present themselves at their birth, are the occasions of most of the bad labours and ill accidents that happen unto them in that condition.

And since midwives are very often obliged, because of the unnatural situations, to draw the children forth by the feet, I conceive it to be most proper first to show how a child must be brought forth that presents itself in that posture, because it will be a guide to several of the rest.

I know indeed in this case it is the advice of several authors to change the figure, and place the head so that it may present to the birth; and this counsel I should be very inclinable to

follow, could they but also show how it may be done. But it will appear very difficult, if not impossible, to be performed, if we would avoid the danger that by such violent agitations both the mother and the child must be put into; and therefore my opinion is, that it is better to draw forth by the feet, when it presents itself in that posture, than to venture a worse accident by turning it.

As soon, therefore, as the waters are broken, and it is known that the child comes thus, and that the womb is open enough to admit the midwife's or operator's hand into it, or else by anointing the passage with oil or hog's grease, to endeavour to dilate it by degrees, using her fingers to this purpose, spreading them one from the other, after they are together entered, and continuing to do so till they be sufficiently dilated, then, taking care that her nails be well paired, no rings on her fingers, and her hands well anointed with oil or fresh butter, and the woman placed in the manner directed in the former section, let her gently introduce her hand into the entrance of the womb, where, finding the child's feet, let her draw it forth in the manner I shall presently direct; only let her first see whether it presents one foot or both; and if but one foot, she ought to consider whether it be the right foot or left, and also in what fashion it comes: for, by that means, she

will soon come to know where to find the other, which, as soon as she knows and finds, let her gently draw it forth with the other; but of this she must be especially careful, viz. that the second be not the foot of another child; for, if so, it may be of the utmost consequence, for she may sooner split both mother and child, than draw them forth: but this may be easily prevented, if she but slide the hand up by the first leg and thigh to the twist, and there find both thighs joined together, and descending from one and the same body. And this is also the best means to find the other foot, when it comes but with one.

As soon as the midwife has found both the child's feet, she may draw them forth, and holding them together, may bring them by little in this manner; taking afterwards hold of the arms and thighs, as soon as she can come at them, drawing them so till the hips come forth. While this is doing, let her observe to wrap the parts in a single cloth, that so her hands, being always greasy, slide not on the infant's body, which is very slippery, because of the vicious humours which are all over it; which being done, she may take hold under the hips, so as to draw it forth to the beginning of the breast; and let her on both sides with her hand bring down the child's hand along its body, which she may easily find; and then let her take care that

the belly and face of the child be downwards: for, if they should be upwards, there would be some danger of its being stopped by the chin, over the share-bone; and therefore, if it be not so, she must turn it to the posture; which may easily be done, if she takes proper hold of the body when the breast and arms are forth, in the manner as we have said, and draws it, turning it in proportion on that side which it most inclines to, till it be turned with the face downwards; and so, having brought it to the shoulders, let her lose no time, desiring the woman at the same time to bear down, that so drawing, the head at that instant may take its place, and not be stopped in the passage. Some children there are whose heads are so big, that when the whole body is born, yet that stops the passage, though the midwife takes all possible care to prevent it. And when this happens, she must endeavour to draw forth the child by the shoulders, (taking care that she separate not the body from the head, as I have known it done by the midwife,) discharging it by little and little from the bones in the passage with the fingers of each hand, sliding them on each side opposite the other, sometimes above, and sometimes under, till the work be ended; endeavouring to despatch it as soon as possible, lest the child be suffocated, as it will unavoidably be, if it remain long in that posture; and this

being well and carefully effected, she may soon after fetch away the after-birth, as I have before directed.

SECT. III. *How to bring away the Head of the Child, when separated from the Body, and left behind in the Womb.*

THOUGH the utmost care be taken in bringing away the child by the feet, yet, if it happen to be dead, it is sometimes so putrified and corrupt, that with the least pull the head separates from the body, and remains alone in the womb, and cannot be brought away but with a manual operation and great difficulty, it being extremely slippery, by reason of the place where it is, and from the roundness of its figure, on which no hold can be taken; and so very great is the difficulty in this case, that sometimes two or three able practitioners of midwifery have, one after the other, left the operation unfinished, as not able to effect it, after the utmost industry, skill and strength; so that the woman, not being able to be delivered, perished. To prevent which fatal accident, let the following operation be observed.

When the infant's head separates from the body, and is left alone behind, whether through putrefaction or otherwise, let the operator immediately, without any delay, while the womb

is still open, direct up his right hand to the mouth of the head (for no other hole can there be had), and having found it, let him put one or two of his fingers into it, and the thumb under its chin; then let him draw it by little and little, holding it by the jaws: but if that fails, as sometimes it will, when putrified, then let him pull out the right hand, and slide up his left with which he must support the head, and with the right let him take a narrow instrument called a *crotchet*, but let it be strong, and with a single branch, which he must guide along the inside of his hand, with the point of it towards it, for fear of hurting the womb; and having thus introduced it, let him turn it towards the head, to strike either in an eye-hole, or the hole of an ear, or behind the head, or else between the sutures, as he finds it most convenient and easy; and then draw forth the head so fastened with the said instrument, still helping to conduct it with his left hand; but when he hath it brought near the passage, being strongly fastened to the instrument, let him remember to draw forth his hand, that the passage, not being filled with it, may be larger and easier, keeping still a finger or two on the side of the head, the better to disengage it.

There is also another method, with more ease and less hardships than the former: let the operator take a soft fillet or linen slip, of about

four fingers' breadth, and the length of three quarters of an ell, or thereabouts, taking the two ends with the left hand, and the middle with the right, and let him so put it up with his right as that it may be beyond the head, to embrace it as a sling doth a stone, and afterwards draw forth the fillet by the two ends together; it will thus be easily drawn forth, the fillet not hindering the least passage, because it takes up little or no space.

When the head is fetched out of the womb, care must be taken that not the least part of it be left behind, and likewise to cleanse the womb of the after-burden, if yet remaining. If the burden be wholly separated from the side of the womb, that ought to be first brought away, because it may also hinder the taking hold of the head. But if it still adheres to the womb, it must not be meddled with till the head be brought away; for if one should endeavour to separate it from the womb, it might then cause a flooding, which would be augmented by the violence of the operation; the vessels to which it is joined remaining for the most part open as long as the womb is distended, which the head causeth while it is retained in it, and cannot be closed till this strange body be voided, and this it doth by contracting and compressing itself together, as has been more fully before explained. Besides, the after-birth remaining thus

cleaving to the womb during the operation prevents it from receiving easily either bruise or hurt.

SECT. IV *How to deliver a Woman when the Child's Head is presented to the Birth.*

THOUGH some may think it a natural labour, when the child's head comes first; yet, if the child's head present not the right way, even that is an unnatural labour; and therefore, though the head comes first, yet if it be the side of the head instead of the crown, it is very dangerous both to the mother and child, for the child's neck would be broken, if born in that manner; and by how much the mother's pains continue to bear the child, which is impossible unless the head be rightly placed, the more the passages are stopped. Therefore, as soon as the position of the child is known, the woman must be laid with all speed, lest the child should advance further into this vicious posture, and thereby render it more difficult to thrust it back, which must be done, in order to place the head right in the passage, as it ought to be.

To this purpose, therefore, place the woman so that her thighs may be a little higher than her head and shoulders, causing her to lean a little upon the opposite side to the child's ill

posture; then let the operator slide up his hand, well anointed with oil, by the side of the child's head, to bring it right gently with his fingers between the head and the womb; but if the head be so engaged that it cannot be done that way, he must then put up his hand to the shoulders, that so by thrusting them back a little into the womb, sometimes on the one side and sometimes on the other, he may, by little and little, give a natural position. I confess it would be better, if the operator could put back the child by its shoulders with both hands: but the head takes up so much room, that he can only make use of his fingers, with which he must perform this operation, and with the help of the finger-ends of the other hand put forward the child's birth, as in natural labour.

Some children present their face first, having their hands turned back, in which posture it is extremely difficult for a child to be born; and if it continues so long, the face will be swelled, and become black and blue, so that it will at first appear monstrous, which is occasioned as well by the compression of it in that place, as by the midwife's fingers in handling it, in order to place it in a better posture. But this blackness will wear away in three or four days' time, by anointing it often with oil of sweet almonds. To deliver the birth, the same operation must

be used as in the former, when the
first with the side of the head;
midwife or operator work very
as much as possible the bruising

SECT. V. *How to Deliver a Wo*
Child presents one or both Hands
the Head.

SOMETIMES the infant will present
part together with its head; which
it is usually with one or both its
this hinders the birth, because the
up part of that passage which is
for the head alone: besides when
they generally cause the head
side; and therefore this position
styled unnatural. When the child
thus, the first thing to be done,
ceived, must be to prevent it from
more, or engaging further in the
therefore the operator having pl
on the bed, with her head lower th
must guide and put back the
with his own as much as may
them, if they both come down,
the child's head; and this being
head be on one side, it must be
its natural posture, in the middle
sage, that it may come in a

thighs a little raised above her breast, and (which situation ought also to be observed when the child is to be put back into the womb), let the midwife afterwards take hold of the child by the feet, and draw it forth, as is directed in the second section.

This labour, though somewhat troublesome, yet is much better than when the child presents only its hands; for then the child must be quite turned round before it can be drawn forth; but in this they are ready, presenting themselves, and there is little to do but to lift and thrust back the upper part of the body, which is almost done of itself, by drawing it by the feet alone.

I confess there are many authors that have written of labours, who would have all wrong births reduced to a natural figure; which is, to turn it that it may come with the head first. But those that have written thus are such as never understood the practical part; for if they had the least experience therein, they would know that it is impossible; at least, if it were to be done, that violence must necessarily be used in doing it, that would very probably be the death of both mother and child in the operation. I would therefore lay down, as a general rule, that whensoever a child presents itself wrong to the birth, in what posture soever, from the shoulders to the feet, it is the



Position of the Embryos in a plural Conception.

best way, and soonest done, to draw it out by the feet; and that it is better to search for them, if they do not present themselves, than to try to put them in the natural posture, and place the head foremost; for the great endeavours necessary to be used in turning the child in the womb, do so much weaken both the mother and the child, that there remains not afterwards strength enough to commit the operation to the work of nature; for, usually, the woman hath no more throes or pains fit for labour after she has been so wrought upon: for which reason it would be difficult, and tedious at best; and the child by such an operation made very weak, would be in extreme danger of perishing before it could be born. It is therefore much better in these cases to bring it away immediately by the feet; searching for them, as I have already directed, when they do not present themselves; by which the mother will be prevented a tedious labour, and the child be often brought alive into the world, who otherwise could hardly escape death.

SECT. VII. *How a Woman should be delivered that has Twins, which present themselves in different Postures.*

WE have already spoken something of the birth of twins in the chapter of natural labour; for

it is not an unnatural labour barely to have twins, provided they come in a right position to the birth. But when they present themselves in different postures, they come properly under the denomination of unnatural labours; and if when one child presents itself in a wrong figure, it makes the labour dangerous and unnatural, it must needs make it much much more so when there are several, and render it not only more painful to the mother and children, but to the operator also; for they often trouble each other, and hinder both their births. Besides which, the womb is so filled with them, that the operator can hardly introduce his hand without much violence, which he must do, if they are to be turned or thrust back to give them a better position.

When a woman is pregnant with two children, they rarely present to the birth together, the one being generally more forward than the other; and that is the reason that but one is felt, and that many times the midwife knows not there are twins till the first is born, and that she is going to fetch away the after-birth. In the first chapter, wherein I treated of natural labour, I have showed how a woman should be delivered of twins, presenting themselves both right; and therefore, before I close the chapter of unnatural labour, it only remains that I show what ought to be done when they

either both come wrong, or one of them only, as for the most part it happens; the first generally coming right, and the second with the feet forward, or in some worse posture. In such a case, the birth of the first must be hastened as much as possible, to make way for the second, which is best brought away by the feet, without endeavouring to place it right, because, it has been, as well as its mother, already tired and weakened by the birth of the first, and there would be greater danger of its death than likelihood of its coming out of the womb that way.

But if, when the first is born naturally, the second should likewise offer its head to the birth, it would be then best to leave nature to finish what she has so well begun; and if nature should be too slow in her work, some of those things mentioned in the fourth chapter, to accelerate the birth, may be properly enough applied: and if, after that, the second birth should be yet delayed, let a manual operation be deferred no longer; but the woman being properly placed, as has been before directed, let the operator direct his hand gently into the womb to find the feet, and so draw forth the second child, which will be the more easily effected, because there is a way made sufficiently by the birth of the first; and if the waters of this second child be not broke, as it often hap-

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legs and thighs up to the wrist, he finds they both belong to one body; of which being thus assured, he may begin to draw forth the nearest, without regarding which is the strongest or weakest, bigger or less, living or dead, having first put aside that part of the other child which offers to have the more way, and so dispatch the first as soon as may be, observing the same rules as if there were but one, that is, keeping the breast and face downwards, with every circumstance directed in that section where the child comes with its feet first, and not fetch the burden till the second child is born. And therefore, when the operator hath drawn forth one child, he must separate it from the burden, having tied and cut the navel-string, and then fetch the other by the feet in the same manner, and afterwards bring away the after-burden with the two strings as hath been before showed. If the children present any other part but the feet, the operator may follow the same method as directed in the foregoing section, where the several unnatural positions are fully treated of.

CHAP. VII.

DIRECTIONS FOR CHILD-BEARING WOMEN IN THEIR LYING-IN.

SECT. I. *How a Woman newly Delivered ought to be ordered.*

As soon as she is laid in her bed, let her be placed in it conveniently for ease and rest, which she stands in great need of, to recover herself of the great fatigue she underwent during her travail; and that she may lie the more easily let her hands and body be a little raised, that she may breathe more freely, and cleanse the better, especially of that blood which then comes away, that so it may not clot, which being restrained causeth great pain.

Having thus placed her in bed, let her take a draught of burnt white wine, having a drachm of spermaceti melted therein. The herb vervain is also singularly good for a woman in this condition, boiling it in what she either eats or drinks, fortifying the womb so exceedingly, that it will do more good in two days, than any other thing does in double that time, having no offensive taste. And this is no more than what she stands in need of; for her lower

parts being greatly distended till the birth of the infant, it is good to endeavour the prevention of an inflammation there. Let there also be outwardly applied, all over the bottom of her abdomen and privities, the following anodyne and cataplasm: Take two ounces of oil of sweet almonds, and two or three new-laid eggs, yolks and whites, stirring them together in an earthen pipkin over hot embers, till they come to the consistence of a poultice; which being spread upon a cloth, must be applied to those parts, indifferently warm, having first taken away the closure (which was put to her presently after her delivery), and likewise such clots of blood as were then left. Let this lie on five or six hours, and then renew it again when you see cause.

Great care ought to be taken at first, that if her body be very weak, she be not kept too hot, for extremity of heat weakens nature and dissolves the strength; and whether she be weak or strong, be sure that no cold air comes near her at first; for cold is an enemy to the spermatic parts, and if it get into the womb, it increases the afterpains, causes swelling in the womb, and hurts the nerves. As to her diet, let it be hot, and let her eat but a little at a time. Let her avoid the light for the first three days, and longer if she be weak, for her labour weakens her eyes exceedingly, by a harmony

between the womb and them. Let her also avoid great noise, sadness, and trouble of mind.

If the womb be foul, which may be easily perceived by the impurity of the blood (which will then easily come away in clots or stinking, or if you suspect any of the after-burden to be left behind, which may sometimes happen,) make her drink of featherfew, mugwort, penny-royal, and mother of thyme, boiled in white wine and sweetened with sugar.

Panado and new-laid eggs are the best meat for her at first; of which she may eat often, but not too much at a time. And let her nurse use cinnamon in all her meats and drinks, for it generally strengthens the womb.

Let her stir as little as may be, till after the fifth, sixth, or seventh day of her delivery, if she be weak; and let her take as little meat as possible, for that tends to weaken her very much.

If she goes not well to stool, give a clyster made only with the decoction of mallows and a little brown sugar.

When she hath lain in a week or more, let her use such things as close the womb, of which knot-grass and comfrey are very good; and to them you may add a little polipodium, for it will do her good, both leaves and root being bruised.

SECT. II. *How to remedy those Accidents which a Lying-in Woman is subject to.*

I. THE first common and usual accident that troubles women in their lying-in, is after-pains. They proceed from cold and wind contained in the bowels, with which they are easily filled after labour, because then they have more room to dilate than when the child was in the womb, by which they were compressed; and also because nourishment and matter, contained as well in them as in the stomach, have been so confusedly agitated from side to side during the pains of labour, by the throes which always must compress the belly, that they could not be well digested, whence the wind is afterwards generated, and by consequence the gripes which the woman feels running in her bowels from side to side, according as the wind moves more or less, and sometimes likewise from the womb, because of the compression and commotion which the bowels make. These being generally the case, let us now apply a suitable remedy.

1. Boil an egg soft, and pour out the yolk of it: with which mix a spoonful of cinnamon water, and let her drink it; and if you mix in it two grains of ambergris, it will be better;

and yet vervain taken in any thing she drinks, will be as effectual as the other.

2. Give the lying-in woman, immediately after delivery, oil of sweet almonds and syrup of maiden-hair mixed together. Some prefer oil of walnuts, provided it be made of nuts that are very good; but it tastes worse than the other at best. This will lenify the inside of the intestines by unctuousness, and by that means bring away that which is contained in them more easily.

3. Take and boil onions well in water, then stamp them with oil of cinnamon, spread them on a cloth, and apply them to the region of the womb.

4. Let her be careful to keep her body warm, and not to drink too cold; and if the pain prove violent, hot cloths, from time to time, must be laid on her abdomen, or a pancake fried in walnut oil may be applied to it, without swathing her body too strait. And for the better evacuating the wind out of the intestines, give her a clyster, which may be repeated as often as necessity requires.

5. Take bay-berries, beat them to powder, put the powder upon a chafing-dish of coals, and let her receive the smoke of them up her privities.

6. Take tar and bear's grease, of each an equal quantity, boil them together, and whilst it is

boiling, add a little pigeon's dung to it. Spread some of this upon a linen cloth, and apply it to the reins of the back of her that is troubled with after-pains, and it will give her speedy ease.

Lastly, Let her take half a drachm of bay-berries beaten into a powder in a draught of muscadel or tent.

II. Another accident to which women in child-bed are subject is the hemorrhoids, or piles, occasioned through the great straining in bringing the child into the world. To cure this,

1. Let her be let blood in the saphæna vein.

2. Let her use polypodium in her meat and drink, bruised and boiled.

3. Take an onion, and having made a hole in the middle of it, fill it full of oil, roast it, and having bruised it all together, apply it to the fundament.

4. Take a dozen of snails, without shells if you can get them, or else so many shell snails, and pull them out, and having bruised them with a little oil, apply them warm as before.

5. If she go not well to stool, let her take an ounce of cassia fistula drawn at night going to bed; she needs no change of diet after.

III. Retention of the menses is another accident happening to women in child-bed; and which is of so dangerous a consequence, that, if

not timely remedied, it proves mortal. When this happens,

1. Let the woman take such medicines as strongly provoke the terms, such as dittany, betony, pennyroyal, featherfew, centuary, juniper-berries, peony roots.

2. Let her take two or three spoonfuls of briony water each morning.

3. Gentian roots beaten into a powder, and a drachm of it taken every morning in wine, are an extraordinary remedy.

4. The roots of birthwort, either long or round, so used and taken as the former, are very good.

5. Take twelve peony seeds, and beat them into a very fine powder, and let her drink them in a draught of hot cardus posset, and let her sweat after. And if this last medicine do not bring them down the first time she takes it, let her take as much more three hours after, and it seldom fails.

IV. Overflowing of the menses is another accident incidental to child-bearing women. For which,

1. Take shepherd's purse, either boiled in any convenient liquor, or dried and beaten into a powder, and it will be an admirable remedy to stop them, this being especially appropriated to the privities.

2. The flower and leaves of brambles, or ei-

ther of them, being dried and beaten into a powder, and a drachm of them taken every morning in a spoonful of red wine, or in a decoction of leaves of the same (which perhaps is much better,) is an admirable remedy for the immoderate flowing of the terms in women.

V. Excoriations, bruises, and rents of the lower part of the womb are often occasioned by the violent distention and separation of the four carbuncles in a woman's labour. For the healing whereof,

As soon as the woman is laid, if there be only simple contusions and excoriations, then let the anodyne cataplasm, formerly directed, be applied to the lower parts to ease the pain, made of the yolks and whites of new-laid eggs and oil of roses, boiled a little over warm embers, continually stirring it till it is mixed, and then spread on a fine cloth; it must be applied very warm to the bearing-place for five or six hours, and when it is taken away, lay some fine rags, dipped in oil of St John's wort, on each side of the bearing-place; or let the part excoriated be anointed with oil of St. John's wort twice or thrice a day; also foment the parts with barley water and honey of roses, to cleanse them from the excrements which pass.

VI. The curding and clotting of the milk is another accident which happens to women in child-bed; for, in the beginning of child-bed,

the woman's milk is not purified, because of the great commotions her body suffered during her labour, which affected all the parts, and it is then moved with many humours. Now this clotting of the milk does, for the most part, proceed from the breasts not being fully drawn, and that either because she has too much milk, and that the infant is too small and weak to suck all, or because she does not desire to be a nurse; for the milk, in those cases remaining in the breast after concoction, without being drawn, loseth the sweetness and the balsamic quality it had, and by reason of the heat it acquires, and the too long stay it makes there, it sours, curds, and clots, in like manner as we see runnet put into ordinary milk turn it into curds. The curding of the milk may be also caused by having taken a great cold, and not keeping the breast well covered.

But from what cause soever this curding of the milk proceeds, the most certain remedy is, speedily to draw the breasts until it is emitted and dried. But in regard that the infant, by reason of weakness, cannot draw strong enough, the woman being hard marked when her milk is curded, it will be most proper to get another woman to draw her breasts until the milk comes freely, and then she may give her child suck. And that she may not afterwards be troubled with a surplus of milk, she

must eat such diet as gives but little nourishment, and keep her body open.

But if the case be such, that the woman neither can nor will be a nurse, it is necessary to apply other remedies for the curing of this distemper: for then it will be best not to draw the breasts: for that will be the way to bring more milk into them. For which purpose, it will be necessary to empty the body, by bleeding the arm: besides which, let the humours be drawn down by strong clysters and bleeding in the feet: nor will it be amiss to purge gently; and to digest, dissolve, and dissipate the curded milk, apply a cataplasm of pure honey, or that of the four brains dissolved in a decoction of sage, milk, smallage, and fennel, mixing with it oil of camomile, with which oil let the breasts be well anointed. The following liniment is also good to scatter and dissipate the milk.

A Liniment to Scatter and Dissipate the Milk.

That the milk flowing back to the breast may without offence be dissipated, you must use this ointment: "Take pure wax two ounces, linseed half a pound; when the wax is melted, let the liniment be made, wherein linen cloths must be dipped, and, according to their largeness, be laid upon the breast; and when it

shall be dispersed, and pains no more, let other linen cloths be dipped in the distilled water of acorns, and put them upon them."

Note. That the cloths dipped into distilled water of acorns must be used only by those who cannot nurse their own children: but if a swelling in the breast of her who gives suck do arise from abundance of milk, and threatens an inflammation, let her use the former ointment, but abstain from using the distilled water of acorns.

CHAP. VIII.

Directions for the Nurses, in ordering Newly-born Children.

When the child's navel-string hath been cut, according to the rules prescribed, let the midwife presently cleanse it from the excrements and filth it brings into the world with it; of which some are within the body, as the urine in the bladder, and the excrements found in the guts; and others without, which are thick, whitish, and clammy, proceeding from the sliminess of the waters. There are children sometimes covered all over with this, that one would think they were rubbed over with soft

cheese; and some women are of so easy a belief, that they really think it so, because they had eaten some while they were with child. From these excrements let the ch ld be cleansed with wine and water a little warmed, washing every part therewith, but chiefly the head, because of the hair, also on the folds of the groin, arm-pits, and privities; which parts must be gently cleansed with a linen rag, or a soft sponge dipped in lukewarm wine. If this clammy or vicious excrement stick so close that it will not easily be washed off from those places, it may be fetched off with oil of sweet almonds, or a little fresh butter melted with wine, and afterwards well dried off; also make tents of fine rags, and wetting them in this liquor, clear the ears and nostrils; but for the eyes, wipe them only with a dry soft rag, and dipping it in the wine, lest it should make them smart.

The [illegible] thus washed, and cleansed from th[illegible] and impurities which [illegible] it must in the next [illegible] things be [illegible]

that all be right without, and that the outside of the body be cleansed, but she must chiefly observe whether it dischargeth the excrements contained within, and whether the passage be open; for some have been born without having been perforated. Therefore, let her examine whether the conduits of the urine and stool be clear, for want of which some have died, not being able to void their excrements, because timely care was not taken at first. As to the urine, all children, as well males as females, do make water as soon as they are born, if they can, especially if they feel the heat of the fire, and sometimes also void the excrements, but not so soon as the urine. If the infant does not ordure the first day, then put up into its fundament a small suppository, to stir it up to be discharged, that it may not cause painful gripes by remaining so long in the belly. A sugar almond may be proper for this purpose, anointed over with a little boiled honey; or else a small piece of Castile-soap rubbed over with fresh butter; also give the child for this purpose a little syrup of roses or violets at the mouth, mixed with some oil of sweet almonds drawn without a fire, anointing the belly also with the same oil or fresh butter.

The midwife having thus washed and cleansed the child, according to the before-mentioned directions, let her begin to swaddle it in swath-

ing clothes, and when she dresses the head, let her put small rags behind the ears, to dry up the filth which usually engenders there, and so let her do also in the folds of the arm-pits and groin, and so swathe it; then wrap it up warm in a bed with blankets, which there is scarcely any woman so ignorant but knows well enough how to do: only let me give them this caution, that they swathe not the child too strait in its blankets, especially about the breast and stomach, that it may breathe the more freely, and not be forced to vomit up the milk it sucks, because the stomach cannot be sufficiently extended to contain it; therefore let its arms and legs be wrapped in its bed stretched and straight, and swathed to keep them so, viz. the arms along its sides, and its legs equally both together, with a little of the bed between them, that they may not be galled by rubbing each other; then let the head be kept steady and straight, with a stay fastened on each side of the blanket; and then wrap the child up in a mantle and blankets to keep it warm. Let none think this of swathing the infant is needless to set down, for it is necessary it should be thus swaddled, to give its little body a straight figure, which is most decent and proper for a man, and to accustom him to keep upon his feet, who otherwise would go upon all four, as most other animals do.

CHAP. IX.

SECT. I. *Of Gripes and Pains in the Bellies of young Children.*

THIS I mention first, as it is often the first and most common distemper which happens to little infants after their birth; many children being so troubled therewith, that it causes them to cry night and day, and at last die of it. The cause of it for the most part comes from the sudden change of their nourishment, for having always received it from the umbilical vessel whilst in the mother's womb, they come on a sudden not only to change the manner of receiving it, but the nature and quality of what they receive, as soon as they are born; for instead of purified blood only, which was conveyed to them by means of the umbilical vein only, they are now obliged to be nourished by their mother's milk, which they suck with their mouths, and from which are engendered many excrements, causing gripes and pains; and not only because it is not so pure as the blood with which it was nourished in the womb, but because the stomach and the intestines cannot make a good digestion, being unaccustomed to it. It is also caused sometimes by a rough

phlegm, and sometimes by worms; for physicians affirm, that worms have been bred in children even in their mother's womb.

Cure. If it proceed from the too sudden change of nourishment, the remedy must be to forbear giving the child suck for some days, lest the milk be mixed with phlegm, which is then in the stomach corrupt: and at first it must suck but little, until it is accustomed to digest it. If it be the excrements in the intestines, which, by their long stay, increase these pains, give them at the mouth a little oil of sweet almonds and syrup of roses: if it be worms, lay a cloth dipped in oil of wormwood, mixed with ox-gall upon the belly, or a small cataplasm mixed with the powder of rue, wormwood, coloquintida, aloes, and the seeds of citron incorporated with ox-gall and the powder of lupines. Or give it oil of sweet almonds, with sugar-candy, and a scruple of aniseed; it purgeth new-born babes from green choler and stinking phlegm; and, if it be given with sugar-pap, it allays the griping pains of the belly. Also, anoint the belly with oil of dill, or pelitory stamp, with oil of camomile.

SECT. II. *Of Weakness in newly-born Infants.*

WEAKNESS is an accident that many children bring into the world along with them, and is

often occasioned by the labour of the mother; by the violence and length whereof they suffer so much, that they are born with great weakness, and many times it is difficult to know whether they are alive or dead, their body appearing so senseless and their face so blue and livid, that they seem to be quite choked; and even after some hours, their showing any signs of life is attended with weakness, that it looks like a return from death, and that they are still in a dying condition.

Cure. Lay the infant speedily in a warm blanket, and carry it to the fire, and then let the midwife take a little wine in her mouth and spout it into its mouth, repeating it often, if there be occasion. Let her apply linen to the breast and belly dipped in wine, and let the face be uncovered, that it may breathe the more freely; also, let the midwife keep its mouth a little open, cleanse the nostrils with small linen tents dipped in white wine, that it may receive the smell of it; and let her chafe every part of its body well with warm cloths, to bring back its blood and spirits, which, being retired inwards, through weakness, often puts it in danger of being choked. By the application of these means, the infant will gradually recover strength, and begin to stir its limbs by degrees, and at length to cry; and though it be but

weakly at first, yet afterwards, as it breathes more freely, its cry will become strong.

SECT. III. *Of the Fundament being closed up in a newly-born Infant.*

ANOTHER defect that new-born infants are liable to is, to have their fundaments closed up; by which they can never evacuate the new excrements engendered by the milk they suck, nor that which was amassed in their intestines before birth, which is certainly mortal without a speedy remedy. There have been some female children who have had their fundaments quite closed, and yet have voided the excrements of the guts by an orifice, which nature, to supply that defect, had made within the neck of the womb.

Cure. Here we must take notice, that the fundament is closed two ways: either by a single skin, through which one may discover some black and blue marks, proceeding from the excrements retained, which, if one touch with the finger, there is a softness felt within, and therefore about it ought to be pierced; or else it is quite stopped by a thick fleshy substance, in such sort that there appears nothing without by which its true situation may be known. When there is nothing but the single skin which makes the closure, the operation is very easy,

and the children may do very well; for then an aperture or opening may be made with a small incision-knife, cross ways, that it may the better receive a round form, and that the place may not afterwards grow together, taking care not to prejudice the sphincter or muscles of the rectum. The incision being thus made, the excrements will certainly have issue. But if, by reason of their long stay in the belly, they become so dry that the infant cannot void them, then let a clyster be given to moisten and bring them away; afterwards put a linen tent into the new-made fundament, which, at first, had best be anointed with honey of roses, and towards the end, with a drying cicatrizing ointment, such as unguentum album, or ponphilex, observing to cleanse the infant of its excrements, and dry it again as soon and as often as it evacuates them, that so the aperture may be prevented from turning into a malignant ulcer.

But if the fundament be stopped up in such a manner, that neither mark nor appearance of it can be seen or felt, then the operation is much more difficult; and even when it is done, the danger is much greater, that the infant will not survive it. Then if it be a female, and it sends forth its excrements by the way I have mentioned before, it is better not to meddle, than, by endeavouring to remedy an inconvenience, run an extreme hazard of the infant's death.

But when there is no vent for the excrements, without which death is unavoidable, then the operation is justifiable.

Operation.—Let the operator, with a small incision-knife that hath but one edge, enter into the void place, and turning the back of it upwards, within half a finger's breadth from the child's anus, which is the place where he will certainly find the intestine; let him thrust it forward, that it may be open enough to give free vent to the matter there contained, being especially careful of the sphincter; after which, let the wound be dressed according to the method directed.

SECT. IV. *Of the Thrush, or [illegible] in the Mouth of the In[illegible]*

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where the putrefaction is easily augmented; and because the remedies applied cannot lodge there, being soon washed with spittle. But if it arises from too hot quality in the nurse's milk, care must be taken to temper and cool, prescribing her cool diet, bleeding and purging her also, if there be occasion.

Take lentiles husked, powder them, and lay a little of them upon the child's gums. Or take bdellium flower half an ounce, and with oil of roses make a liniment. Also wash the child's mouth with barley and plantain-water, and honey of roses, or syrup of dry roses, mixing with them a little verjuice of lemons, as well to loosen and cleanse the vicious humours which cleave to the inside of the child's mouth, as to cool those parts which are already overheated. This may be done by means of a small fine rag fastened to the end of a little stick, and dipped therein, whereby the ulcers may be gently rubbed, being careful not to put the child in too much pain, lest an inflammation make the distemper worse. The child's body must also be kept open, that the humours being carried to the lower parts, the vapours may not ascend, as it is usual for them to do when the body is costive, and the excrements too long retained.

If the ulcers appear malignant, let such remedies be used to do their work speedily, that the

evil qualities that cause them being thereby instantly corrected, their malignity may be prevented; and in this case touch the ulcers with plantain water, sharpened with the spirits of vitriol; for the remedy must be made sharp, according to the malignity of the distemper. It will be necessary to purge these ill humours out of the whole habit of the child, by giving half an ounce of succory with rhubarb.

SECT. V. *Of Pains in the Ears, Inflammation, Moisture, &c.*

THE brain in infants is very moist, and hath many excrements which nature cannot send out at the proper passages; they get often to the ears, and there cause pains, flux of blood, with inflammation, and matter with pain; this in children is hard to be known, as they have no other way to make it known but by constant crying; you will perceive them ready to feel their ears themselves, but will not let others touch them if they can prevent it; and sometimes you may discern the parts above the ears to be very red.

These pains, if let alone, are of dangerous consequences, because they may bring forth watchings and epilepsy; for the moisture breeds worms there, and fouls the spongy bones, and by degrees causes incurable deafness.

Cure. Allay the pain with convenient speed, but have a care of using strong remedies. Therefore only use warm milk about the ears, with the decoction of poppy tops, or oil of violets: to take away the moisture, use honey of roses, and let aquamollis be dropped into the ears; or take virgin honey, half an ounce; red wine two ounces; alum, saffron, saltpetre, each a drachm; mix them at the fire; or drop in hempseed oil with a little wine.

Sect. VI. *Of Redness, and Inflammation of the Buttocks, Groin, and the Thighs of a Young Child.*

If there be no care taken to change and wash the child's bed as soon as it is fouled with the excrements, and to keep the child very clean, the acrimony will be sure to cause redness, and beget a smarting in the buttocks, groin, and thighs of the child, which, by reason of the pain, will afterwards be subject to inflammations, which follow the sooner, through the delicacy and tenderness of their skin, from which the outward skin of the body is in a short time separated and worn away.

Cure. First, keep the child cleanly: and, secondly, take off the sharpness of its urine. As to keeping it cleanly, she must be a sorry nurse that needs to be taught how to do it;

for if she lets it have but dry, clean, and warm beds and cloths, as often and as soon as it has fouled and wet them, either by its urine or excrements, it will be sufficient. And as to taking off the sharpness of the child's urine, that must be done by the nurse's taking a cool diet, that her milk may have the same quality; and therefore she ought to abstain from all things that may tend to heat it.

But besides these, cooling and drying remedies are requisite to be applied to the inflamed parts; therefore let the parts be bathed with plantain-water, with a fourth of lime-water added to it, each time the child's excrements are wiped off; and if the pain be very great, let it only be fomented with luke-warm milk. The powder of a post to dry it, or a little mill-dust strewed upon the parts affected, may be proper enough, and is used by many women. Also, unguentum album, or diapampholigos, spread upon a small piece of leather, in form of a plaster, will not be amiss.

But the chief thing must be the nurse's taking great care to wrap the inflamed parts with fine rags when she opens the child, that those parts may not gather and be pained by rubbing together.

SECT. VII. *Of Vomiting in young Chil*

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with respect to the nurse, and the condition of the milk must be chiefly observed: the nurse must be cautioned that she eat no green fruit, nor things of hard concoction. If the child suck not, remove the flux with such purges as leave the cooling quality behind them, as syrup of honey or roses, or a clyster. Take the decoction of millium, myrobalans, of each two or three ounces, with an ounce or two of syrup of roses, and make a clyster. After cleansing, if it proceed from a hot cause, give syrup of dried roses, quinces, myrtles, with a little sanguis draconis. Also anoint with oil of roses, myrtles, mastich, each two drachms; with oil of myrtles and wax make an ointment. Or take red roses and moulin, of each a handful; cypress roots two drachms; make a bag, boil it in red wine, and apply it to the belly. Or, use the plaster of bread, or stomach ointment. If the cause be cold, and the excrements white, give syrup of mastich and quinces, with mint-water. Use outwardly mint, mastich, cummin; or take rose seeds an ounce; cummin, aniseed, each two drachms; with oil of mastich, wormwood, and wax, make an ointment.

SECT. X. *Of the Epilepsy and Convulsions in Children.*

THIS is a distemper that is often fatal to young children, and frequently proceeds from the brain, as when the humours that cause it are bred in the brain, originating either from the parents, or from vapours or bad humours that twitch the membranes of the brain: it is also sometimes caused by other distempers, and by bad diet: likewise the toothache, when the brain consents, causes it, and so does a sudden fright. As to the distemper itself, it is manifest and well enough known where it is; and as to the cause whence it comes, you may know by the signs of the disease, whether it comes from bad milk, or worms, or teeth; if these are all absent, it is certain that the brain is first affected; if it comes from the small-pox or meazles, it ceaseth when they come forth, if nature be strong enough.

Cure. For the remedy of this grievous and often mortal distemper, give the following powder, to prevent it, to a child as soon as it is born: take male peony roots, gathered in the decrease of the moon, a scruple; with leaf gold make a powder; take peony roots a drachm; peony seeds, misletoe of the oak, elk's hoofs, man's skull, amber, each a scruple; musk, two

grains; make a powder. The best part of the cure is taking care of the nurse's diet, which must be regular, by all means. If it be from corrupt milk, provoke a vomit; to do which, hold down the tongue, and put a quill, dipped in sweet almonds, down the throat. If it come from the worms, give such things as will kill the worms. If there be a fever, with respect to that also, give coral smaraged and elk's hoof. In the fit, give epileptic water, as lavender water, and rub with oil of amber, or hang a peony root, and elk's hoof smaraged, about the child's neck.

As to a convulsion, it is when the brain labours to cast out that which troubles it; the manner is in the marrow of the back, and fountain of the nerves; it is a stubborn disease, and often kills.

Wash the body, when in the fit, with decoction of althæa, lily roots, peony and camomile flowerets, and anoint it with man's and goose's grease, oils of worms, orris, lilies, foxes, turpentine, mastich, storax, and calamint. The sunflower is also very good, boiled in water, to wash the child.

PROPER AND SAFE REMEDIES FOR CURING ALL THOSE DISTEMPERS THAT ARE PECULIAR TO THE FEMALE SEX.

CHAP. I.

The Diseases of the Womb.

I have already said, that the womb is the field of generation; and if this field be corrupted, it is vain to expect any fruit, though it be ever so well sown. It is therefore not without reason that I intend in this chapter to set down the several distempers to which the womb is obnoxious, with proper and safe remedies against them.

Sect. I. *Of the Hot Distemper of the Womb.*

This distemper consists in excess of heat; for as heat of the womb is necessary for concep-

ception, so if it be too much, it nourisheth not the seed, but disperseth its heat and hinders the conception. This preternatural heat is sometimes from the birth, and causes barrenness; but if it be accidental, it is from hot causes, that bring the heat and the blood to the womb; it arises from internal and external medicines, and from too much hot meat, drink, and exercise. Those that are troubled with this distemper have but few courses, and those are yellow, black, burnt, or sharp; are subject to headache, and abound with choler; and when the distemper is strong upon them, they have but few terms, which are out of order, being bad and hard to flow, and in time they become hypochondriacs, and for the most part barren, having sometimes a frenzy of the womb.

Cure. The remedy is to use coolers, so that they offend not the vessels that must open the flux of the terms. Therefore, take the following inwardly, succory, endive, violets, water lilies, sorrel, lettuce, saunders, and syrups and conserve made thereof. Also take conserve of succory, violets, water lilies, burrage, each an ounce; conserve of roses, half an ounce, diamargation frigid, diatriascantal, each half a drachm; and with syrup of violets, or juice of citrons, make an electuary. For outward applications, make use of ointment of roses, vio-

lets, water lilies, gourd, venus narvel, applied to the back and loins.

Let the air be cool, her garments thin, and her food endive, lettuce, succory, and barley. Give her no hot meats, nor strong wine, unless mixed with water. Rest is good for her, she may sleep as long as she pleases.

Sect. II. *Of the Cold Distemper of the Womb.*

This distemper is the reverse of the foregoing, and equally an enemy to generation, being caused by a cold quality abounding to excess, and proceeds from a too cold air, rest, idleness, and cooling medicines. The terms are phlegmatic, thick, and slimy, and do not flow as they should; the womb is windy, and the seed crude and waterish. It is the cause of obstructions, and barrenness, and hard to be cured.

Cure. Take galengal, cinnamon, nutmeg, mace, cloves, each two drachms; ginger, cubebs, nedory, cardamum, each an ounce; grains of paradise, long pepper, each half an ounce; beat them, and put them into six quarts of wine for eight days; then add sage, mint, balm, motherwort, of each three handfuls: let them stand eight days more, then pour off the wine, and beat the herbs and the spice, and then pour off the wine again, and distil them. Or you may use this: take cinnamon, nutmeg, cloves,

mace, ginger, cubebs, cardamum, grains of paradise, each an ounce and a half; galengal six drachms, long pepper half an ounce, zedoary five drachms, bruise them, and add six quarts of wine; put them into a cellar nine days; daily stirring them; then add of mint two handfuls, and let them stand fourteen days; pour off the wine, and bruise them, and then pour on the wine again, and distil them. Also anoint with oil of lilies, rue, angelica, bays, cinnamon, cloves, mace, and nutmeg. Let her diet and air be warm, her meat of easy concoction, seasoned with aniseed, fennel, and thyme; and let her avoid raw fruits and milk diet.

SECT. III. *Of the Inflation of the womb.*

THE inflation of the womb is a stretching of it by wind, called by some a windy mole; the wind proceeds from a cold matter, whether thick or thin, contained in the veins of the womb, by which the heat thereof is overcome, and which either flows thither from other parts, or is gathered there by cold meats and drinks. Cold air may be a producing cause of it also, as women that lie-in are exposed to it. The wind is contained either in the cavity of the vessels of the womb, or between the tunicles, and may be known by a swelling in the region of the womb, which sometimes reaches to the navel, loins,

and diaphragm, and rises and abates as the wind increaseth or decreaseth. It differs from the dropsy, in that it never swells so high. That neither physician nor midwife may take it for conception, let them observe the signs of the woman with child laid down in a former part of this work; and if any sign be wanting, they may suspect it to be an inflation; of which this is a further sign, that in conception the swelling is invariable; also if you strike upon the belly, in an inflation, there will be a noise, but not so in case there be a conception. It also differs from a mole, because in that there is a weight and hardness in the abdomen, and when the patient moves from one side to the other she feels a great weight which moveth; but not so in this. If the inflation continue without the cavity of the womb, the pain is greater and more extensive, nor is there any noise, because the wind is more pent up.

Cure. This distemper is neither of a long continuance, nor dangerous, if looked after in time; and if it be in the cavity of the womb, is more easily expelled. To which purpose give her diaphnicon, with a little castor, and sharp clysters that expel wind. If this distemper happen to a woman in travail, let her not purge after delivery, nor bleed, because it is from a cold matter; but if it come after child-bearing, and her terms come down sufficiently, and

she has fulness of blood, let the saphæna vein be opened; after which, let her take the following electuary: take conserve of betony and rosemary, of each an ounce and a half; candied eringoes, citron peel candied, each half an ounce; diacimium, diaganel, each a drachm; oil of aniseed six drops; and with syrup of citrons make an electuary. For outward application make a cataplasm of rue, mugwort, camomile, dill, calamint, new pennyroyal, thyme, with oil of rue, keir, and camomile. And let the following clyster, to expel wind, be put into the womb; take angus castus, cinnamon, each two drachms, boil them in wine to half a pint. She may likewise use sulphur, Bath and Spa waters, both inward and outward, because they expel wind.

SECT. IV. *Of the Straitness of the Womb and its Vessels.*

THIS is another effect of the womb, which is a very great obstruction to the bearing of children, hindering both the flow of the menses and conception, and is seated in the vessels of the womb, and the neck thereof. The causes of this straitness are thick and rough humours, that stop the mouths of the veins and arteries. These humours are bred either by gross or too much nourishment, when the heat of the womb is so

weak that it cannot attenuate the humours, which, by reason thereof, either flow from the whole body, or are gathered into the womb. Now, the vessels are made straiter or closer several ways: sometimes by inflammation, schirrous, or other tumours; sometimes by compressions, scars, or by flesh or membranes that grow after a wound. The signs by which this is known are, the stoppage of the terms, not conceiving, and crudities abounding in the body, which are all shown by particular signs; for if there is a wound, or the secundine pulled out by force, phlegm comes from the wound; if stoppage of the terms be from an old obstruction by humours, it is hard to be cured; if it be only from the disorderly use of astringents, it is more curable; if it be from a schirrous, or other tumours, that compress or close the vessel, the disease is incurable.

Cure. For the cure of that which is curable, obstructions must be taken away, phlegm must be purged, and she must be let blood, as will be hereafter directed in the stoppage of the terms. Then use the following medicines: take of aniseed and fennel seed, each a drachm; rosemary, pennyroyal, calamint, betony flowers, each an ounce; saffron, half a drachm, with wine. Or take asparagus roots, parsley roots, each an ounce; pennyroyal, calamint, each a handful; wall-flowers, gilly-flowers, each two

handfuls; boil, strain, and add syrup of mugwort an ounce and a half. For a fomentation, take pennyroyal, mercury, calamint, marjoram, mugwort, each two handfuls; sage, rosemary, bays, camomile-flowers, each a handful; boil them in water, and foment the groin and bottom of the abdomen; or let her sit up to the navel in a bath, and then anoint about the groin with oil of rue, lilies, dill, &c.

SECT. V. *Of the Falling of the Womb.*

THIS is another evil effect of the womb, which is both very troublesome, and also an hinderance to conception. Sometimes the womb falleth to the middle of the thighs, nay, almost to the knees, and may be known then by its hanging out. Now, that which causeth the womb to change its place is, that the ligaments, by which it is bound to the other parts, are not in order; for there are four ligaments, two above, broad and membranous, that come from the peritoneum, and two below, that are nervous, round and hollow; it is also bound to the great vessels by veins and arteries, and to the back by nerves; but the place is changed when it is drawn another way, or when the ligaments are loose, and it falls down by its own weight. It is drawn on one side when the menses are hindered from flowing, and the veins and arteries

are full, namely, those that go to the womb. If it be a mole on one side, the liver and spleen cause it; by the liver veins on the right side, and the spleen on the left, as they are more or less filled. Others are of opinion, it comes from the solution of the connection of the fibrous neck and parts adjacent; and that it is from the weight of the womb descending; this we deny not; but the ligaments must be loose or broken. But women in a dropsy could not be said to have the womb fallen down, if it came only from looseness; but in them it is caused by the saltness of the water, which dries more than it moistens. Now, if there be a little tumour, within or without the privities, like a skin stretched, or a weight felt upon the privities, it is nothing else but a descent of the womb; but if there be a tumour like a goose's egg, and a hole at the bottom, and there is at first a great pain in the parts to which the womb is fastened, as the loins, the bottom of the abdomen, and the os sacrum, it proceeds from the breaking or stretching of the ligaments; and a little after, the pain is abated, and there is an impediment in walking, and sometimes blood comes from the breach of the vessels, and the excrements and urine are stopped, and then a fever and convulsion ensueth, oftentime proving mortal, especially if it happen to women with child.

Cure. For the cure of this distemper, first put up the womb, before the air alter it, or it be swollen or inflamed: and for this purpose give a clyster to remove the excrements, and lay her upon her back, with her legs abroad, and her thighs lifted up, and head down; then take the tumour in your hand, and thrust it in without violence; if it be swelled by alteration and cold, foment it with a decoction of mallows, althæa, lime, fenugreek, camomile flowers, bay berries, and anoint it with oil of lilies, and hen's grease. If there be an inflammation, do not put it up, but fright it in, by putting a red hot iron before it and making a show as if you intended to burn it; but first sprinkle upon it the powder of mastich, frankincense, and the like; thus, take frankincense, mastich, each two drachms; sarcocol, steeped in milk, a drachm; mummy, pomegranate flowers, sanguis draconis, each half a drachm. When it is put up, let her lie with her legs stretched, and one upon the other, for eight or ten days, and make a pessary in the form of a pear, with cork or sponge, and put it into the womb, dipped in sharp wine, or juice of acasia, with powder of sanguis, with galbanum and bdellium. Apply also a cupping-glass, with a great flame, under the navel or paps, or to both kidneys, and lay this plaster to the back: take opoponax, two ounces; storax liquid, half an ounce; mastich, frankin-

cense, pitch, bole, each two drachms; then with wax make a plaster; or, take laudanum, a drachm and a half; mastich, and frankincense, each half a drachm; wood aloes, cloves, spike, each half a drachm; ash-coloured ambergris, four grains; musk, half a scruple; make two round plasters to be laid on each side of the navel: make a fume of snails' skins salted, or of garlic, and let it be taken in by the funnel. Use also astringent fomentations of bramble leaves, plantain, horse tails, myrtles, each two handfuls; worm-seed, two handfuls; pomegranate flowers, half an ounce; boil them in wine and water. For an injection take comfrey root an ounce; rupture work, two drachms; yarrow, mugwort, each half an ounce; boil them in red wine, and inject with a syringe. To strengthen the womb, take hartshorn, bays, of each a drachm; myrrh, half a drachm; make a powder for two doses, and give it with sharp wine. Or, you may take zedoary, parsnip seed, crabs' eyes prepared, each a drachm; nutmeg, half a drachm; and give a drachm in powder; but astringents must be used with great caution, lest by stopping the courses, a worse mischief follow. To keep it in its place, make rollers and ligatures as for a rupture; and put pessaries into the bottom of the womb, that may force it to remain. Let the diet be such as has drying, astringent, and glueing qualities, as rice,

starch, quinces, pears, and green cheese; but let the summer fruits be avoided; and let her wine be astringent and red.

CHAP. II.

OF DISEASES RELATING TO WOMEN'S MONTHLY COURSES.

SECT. I. *Of Women's Monthly Courses in General.*

THAT divine Providence, which, with a wisdom peculiar to itself has appointed woman to conceive, and to bear and bring forth children, has provided for the nourishment of children during their recess in the womb of their mother, by that redundancy of the blood which is natural to all women; and which, flowing out at certain periods of time (when they are not pregnant), are from thence called *terms* and *menses*, from their monthly flux of excrementitious and unprofitable blood. Now, that the matter flowing forth is excrementitious, is to be understood only with respect to the redundancy and overplus thereof, being an excrement only with respect to its quantity; for as to its quality, it is as pure and incorrupt as any blood in the veins; and this appears from the final cause of it,

which is the propagation and conservation of mankind; and also from the generation of it, being the superfluity of the last aliment of the fleshy parts. If any ask, if the menses be not of a hurtful quality, how can they cause such venomous effects? If they fall upon trees and herbs, they make one barren, and mortify the other. I answer, this malignity is contracted in the womb; for the woman wanting native heat to digest the superfluity, sends it to the matrix, where seating itself till the mouth of the womb be dilated, it becomes corrupt and mortified; which may easily be, considering the heat and moistness of the place; and so this blood being out of its proper vessels, offends in quality.

SECT. II. *Of Terms coming out of order, either before or after the usual Time.*

HAVING, in the former part of this work, treated of the suppression and overflow of the monthly terms, I shall content myself with referring the reader thereto, and proceed to speak of their coming out of order, either before or after the usual time.

Both these proceed from an ill constitution of body. Every thing is beautiful in its order, in nature, as well as in morality; and if the order of nature be broke, it shows the body to

be out of order. Of each of these effects briefly.

When the monthly courses come before their time, showing a depraved excretion, and flowing sometimes twice a month, the cause is in the blood, which stirs up the expulsive faculty of the womb, or else in the whole body, and is frequently occasioned by the person's diet, which increases the blood too much, making it too sharp or too hot. If the retentive faculty of the womb be weak, and the expulsive faculty strong, and of a quick sense, it brings them forth the sooner. Sometimes they flow sooner by reason of a fall, stroke, or some violent passion, which the parties themselves can best relate. If it be from heat, thin and sharp humours, it is known by the distemper of the whole body. The looseness of the vessels, and weakness of the retentive faculty, is known from a moist and loose habit of the body. It is more troublesome than dangerous, but hinders conception, and therefore the cure is necessary for all, but especially such as desire children. If it proceed from a sharp blood, let her temper it by a good diet and medicines. To which purpose, let her use baths of iron water, that correct the distemper of the bowels, and then evacuate. If it proceed from the retentive faculty, and looseness of the vessels, it is to be corrected with gentle astringents.

As to the courses flowing after the usual time, the causes are, thickness of the blood and the smallness of its quantity, with the straitness of the passage, and the weakness of the expulsive faculties. Either of these singly may stop the courses, but if they all concur, they render the distemper worse. If the blood abounds not in such a quantity as may stir up nature to expel it, its purging must necessarily be deferred till there be enough. And if the blood be thick, the passage stopped, and the expulsive faculty weak, the menses must needs be out of order, and the purging of them retarded.

For the cure of this, if the quantity of blood be small, let her use a larger diet, and very little exercise. If the blood be thick and foul, let it be made thin, and the humours mixed therewith be evacuated. It is good to purge after the courses have done flowing, and to use calamint; and indeed the oftener she purges the better. She may also use fumes and pessaries, apply cupping-glasses without scarification to the inside of the thighs, and rub the legs and scarify the ancles, and hold the feet in warm water four or five days before the courses come down. Let her also anoint the bottom part of her abdomen with things proper to provoke the terms.

Remedies for Disorders in Women's Paps.

MAKE a cataplasm of bean meal and salad oil, and lay it to the place affected. Or anoint with the juice of papilaris. This must be done when the paps are very sore.

If the paps be hard and swelled, take a handful of rue, colewort roots, horehound and mint; if you cannot get all these conveniently, any two will do; pound the handful in honey, and apply it once every day till healed.

If the nipples be stiff and sore, anoint twice a day with Florence oil till healed.

If the paps be flappy and hanging, bruise a little hemlock, and apply it to the breast for three days; but let it not stand above seven hours. Or, which is safer, rusæ juice well boiled, with a little smapios added thereto, and anoint.

If the paps be hard and dead, make a plate of lead pretty thin, to answer the breasts; let this stand nine hours each day, for three days. Or sassafras bruised, and used in like manner.

Receipt for Procuring Milk.

DRINK arpleni, drawn as tea, for twenty-one days. Or eat aniseeds. Also the juice of arbor vitæ, a glassful once a day for eleven days, is

very good, for it quickens the memory, strengthens the body, and causeth milk to flow in abundance.

Directions for Drawing of Blood.

DRAWING of blood was at first invented for good and salutary purposes, although often abused and misapplied. To bleed in the left arm removes long-continued pains and headaches. It is also good for those who have got falls and bruises.

Bleeding is good for many disorders, and generally proves a cure, except in some very extraordinary cases; and in these cases bleeding is hurtful.

If a woman be pregnant, to draw a little blood will give her ease, good health, and a lusty child.

Bleeding is a most certain cure for no less than twenty-one disorders, without any outward or inward applications; and for many more, with application of drugs, herbs and flowers.

When the moon is on the increase, you may let blood at any time, day or night; but when she is on the decline, you must bleed only in the morning.

Bleeding may be performed from the month of March to November. No bleeding in De-

cember, January, or February, unless an occasion require it. The months of March, April, and November are the three chief months of the year for bleeding in; but it may be performed with safety from the 9th of March to the 19th of November.

To prevent the dangers that may arise from the unskilful drawing of blood, let none open a vein but a person of experience and practice. There are three sorts of people you must not let draw blood: first, ignorant and inexperienced pretenders. Secondly, those who have bad sight and trembling hands, whether skilled or unskilled. For when the hand trembles, the lancet is apt to startle from the vein, and the flesh be thereby damaged, which may hurt, canker, and very much torment the patient. Thirdly, let no woman bleed you, but such as has gone through a course of midwifery at college; for those who are unskilful may cut an artery, to the great damage of the patient. Besides, what is still worse, those pretended bleeders, who take it up at their own hand, generally keep unedged and rusty lancets, which will prove hurtful even in a skilful hand. Accordingly, you ought to be cautious in choosing your physician: a man of learning knows what vein to open for each disorder; he knows how much blood to take as soon as he sees the patient; and he can give you suitable advice concerning your disorder.

FORM OF A MALE CHILD IN THE WOMB.



EXPLANATION.

A The *uterus*, as stretched to near its full extent, containing the *fœtus* entangled in the *funis.*—B B. The superior part of the *ossa ilium.*—C C. The *acetabula.*—D D. The remaining posterior parts of the *ossa ischium.* —E. The *coccyx.*—F. The inferior part of the *rectum.*—G G. The *vagina* stretched on each side.—H. The *os uteri*, stretched to its full extent.—I I. Part of the *vesica urinaria.*—K K. The *placenta* at the superior and posterior parts of the *uterus.*—L. The *Membranes.*—M. The *funis umbilicalis.*

ARISTOTLE'S BOOK OF PROBLEMS,

WITH OTHER

ASTRONOMERS, ASTROLOGERS, AND PHYSICIANS,

CONCERNING

THE STATE OF MAN'S BODY.

Q. AMONG all living creatures, why hath man only his countenance lifted up towards heaven? A. 1. From the will of the Creator. But, although this answer be true, yet it seemeth not to be of force, because that so all questions might be easily resolved. Therefore, 2. I answer, that, for the most part, every workman doth make his first work worse, and then his second better; so God creating all other animals before man gave them their face looking down to the earth; and then, secondly, he created man, unto whom he gave an upright shape, lifted unto heaven, because it is drawn from divinity, and is derived from the goodness of God, who maketh all his works both perfect and good. 3. Man only, among all liv-

ing creatures, is ordained to the kingdom of heaven, and therefore hath his face elevated and lifted up to heaven, because that, despising earthly and worldly things, he ought often to contemplate on heavenly things. 4. That the reasonable man is like unto angels, and finally ordained towards God; and therefore he hath a figure looking upward. 5. Man is a microcosm, that is, a litttle world, and therefore he doth command all other living creatures, and they obey him. 6. Naturally there is unto every thing and every work that form and figure given which is fit and proper for its motion; as unto the heavens roundness, to the fire a pyramidical form, that is, broad beneath and sharp towards the top, which form is most apt to ascend; and so man has his face towards heaven, to behold the wonders of God's works.

Q. Why are the heads of men hairy? A. The hair is the ornament of the head, and the brain is purged of gross humours by the growing of the hair, from the highest to the lowest, which pass through the pores of the exterior flesh, become dry, and converted into hair. This appears to be the case from the circumstance that in all man's body there is nothing drier than the hair, for it is drier than the bones; and it is well known that some beasts are nourished with bones, as dogs, but they

cannot digest feathers or hair, but void them undigested, being too hot for nourishment. 2. It is answered, that the brain is purged in three different ways; of superfluous watery humours by the eyes, of choler by the nose, and of phlegm by the hair; which is the opinion of the best physicians.

Q. Why have men longer hair on their heads than any other living creatures? A. Arist. de. Generat. Anim. says, that men have the moistest brains of all living creatures, from which the seed proceedeth which is converted into the long hair of the head. 2. The humours of men are fat, and do not become dry easily; and therefore the hair groweth long on them. In beasts, the humours easily dry, and therefore the hair groweth not so long.

Q. Why doth the hair take deeper root in man's skin than in that of any other living creatures? A. Because it has greater store of nourishment in man, and therefore grows more in the inward parts of man. And this is the reason why in other creatures the hair doth alter and change with the skin, and not in man, unless by a scar or wound.

Q. Why have women longer hair than men? A. 1. Because women are moister and more phlegmatic than men; and therefore there is more matter for hair in them, and, by consequence, the length also of their hair. And,

furthermore, this matter is more increased in women than men from their interior parts, and especially in the time of their monthly terms, because the matter doth then ascend, whereby the humour which breedeth the hair doth increase. 2. Because women want beards; so the matter of the beard doth go into that of the hair.

Q. Why have some women soft hair and some hard? A. 1. The hair hath proportion with the skin; of which some is hard, some thick, some subtle and soft, and some gross; therefore the hair which grows out of a thick gross skin, is thick and gross; that which groweth out of a subtle and fine skin is fine and soft; when the pores are open, then cometh forth much humour, and therefore hard hair is engendered; and when the pores are strait, then there doth grow soft and fine hair. This doth evidently appear in men, because women have softer hair than they; for in women the pores are shut and strait, by reason of their coldness. 2. Because for the most part, choleric men have harder and thicker hair than others, by reason of their heat, and because their pores are always open, and therefore they have beards sooner than others. For this reason also, those beasts which have hard hair are the boldest, because such have proceeded from heat and choler, examples of which we have in

the bear and boar; and contrariwise, those beasts that have soft hair are fearful, because they are cold, as the hare and the hart. 3. From the climate where a man is born; because in hot regions hard and gross hair is engendered, as appears in the Ethiopians, and the contrary is the case in cold countries towards the north.

Q. Why have some men curled hair and some smooth? A. From the superior degree of heat in some men, which makes the hair curl and grow upward: this is proved by a man's having smooth hair when he goes into a hot bath, and it afterwards becomes curled. Therefore, keepers of baths have often curled hair, as also Ethiopians and choleric men. But the cause of the smoothness is the abundance of moist humours.

Q. Why do women show ripeness by hair in their privy parts, and not elsewhere, but men in their breasts? A. Because in men and women there is abundance of humidity in that place, but most in women, as men have the mouth of the bladder in that place, where the urine is contained, of which the hair in the breast is engendered, and especially that about the navel. But of women, in general, it is said, that the humidity of the bladder and of the matrix, or womb, is joined, and meeteth in that low, secret place, and therefore is dissolv-

ed and separated in that place into vapours and fumes, which are the cause of hair. And the like doth happen in other places, as in the hair under the arms.

Q. Why have not women beards? A. Because they want heat; which is the case with some effeminate men, who are beardless from the same cause, and have complexions like women.

Q. Why doth the hair grow on those who are hanged? A. Because their bodies are exposed to the sun, which by its heat doth dissolve all moisture into the fume or vapour of which the hair doth grow.

Q. Why is the hair of the beard thicker and grosser than elsewhere; and the more men are shaven, the harder and thicker it groweth? A. Because by so much as the humours or vapours of any liquid are dissolved and taken away, so much the more doth the humour remaining draw to the same; and therefore, the more the hair is shaven, the thicker the humours gather which engender the hair, and cause it to wax hard.

Q. Why are women smoother and fairer than men? A. Because in women much of the humidity and superfluity, which are the matter and cause of the hair of the body, is expelled with their monthly terms; which superfluity,

remaining in men, through vapours passes into hair.

Q. Why doth man, above all other creatures, wax hoary and gray? A. Because man hath the hottest heart of all living creatures; and, therefore, nature being most wise, lest a man should be suffocated through the heat of his heart, hath placed the heart which is most hot, under the brain, which is most cold; to the end that the heat of the heart may be tempered by the coldness of the brain; and contrariwise, that the coldness of the brain may be qualified by the heat of the heart; and thereby there might be a temperature in both. A proof of this is, that of all living creatures man hath the worst breath when he comes to full age. Furthermore, man doth consume nearly half his time in sleep, which doth proceed from the great excess of coldness and moisture in the brain, and from his wanting natural heat to digest and consume that moisture, which heat he hath in his youth, and therefore in that age it is not gray, but in old age when heat faileth; because then the vapours ascending from the stomach remain undigested and unconsumed for want of natural heat, and thus putrify, of which putrefaction of humours the whiteness doth follow which is called grayness or hoariness. Whereby it doth appear, that hoariness is nothing else but a whiteness of hair, caused

by a putrefaction of the humours about the roots of the hair, through the want of natural heat in old age. Sometimes all grayness is caused by the naughtiness of the complexion, which may happen in youth; sometimes through over great fear and care, as appeareth in merchants, sailors, and thieves.

Q. Why doth red hair grow white sooner than hair of any other colour? A. Because redness is an infirmity of the hair; for it is engendered of a weak and infirm matter, that is of matter corrupted with the flowers of the woman; and therefore it waxes white sooner than any other.

Q. Why do wolves grow grisley? A. To understand this question, note the difference between grayness and grisliness: grayness is caused through defect of natural heat, but grisliness through devouring and heat. The wolf being a devouring animal beast, he eateth gluttonously without chewing, and enough at once for three days; in consequence of which, gross vapours are engendered in the wolf's body, which cause grisliness. Grayness and grisliness have this difference; grayness is only in the head, but grisliness all over the body.

Q. Why do horses grow grisly and gray? A. Because they are for the most part in the sun, and heat naturally causes putrefaction;

therefore the matter of hair doth putrify, and in consequence they are quickly peeled.

Q. Why do men become bald, and trees let fall their leaves in winter? A. The want of moisture is the cause of both, which is proved by man's becoming bald through venery, because by that he lets forth his natural humidity and heat; and by that excess in carnal pleasure the moisture is consumed which is the nutriment of the hair. Thus, eunuchs and women do not get bald, because they do not part from this moisture; and therefore eunuchs are of the complexion of women.

Q. Why are not women bald? A. Because they are not cold and moist, which are the causes that the hair remaineth; for moistness doth give nutriment to the hair, and coldness doth bind the pores.

Q. Why are not blind men naturally bald? A. Because the eye hath moisture in it, and that moisture which should pass through by the substance of the eyes doth become a sufficient nutriment for the hair, and therefore they are seldom bald.

Q. Why doth the hair stand on end when men are afraid? A. Because in time of fear the heat doth go from the outward parts of the body into the inward to help the heart, and so the pores in which the hair is fastened are shut up; after which stopping and shutting up of

the pores, the standing up of the hair doth follow.

Of the Head.

Q. Why is a man's head round? A. Because it contains in it the moistest parts of the living creature; and also that the brain may be defended thereby, as with a shield.

Q. Why is the head not absolutely long, but somewhat round? A. To the end that the three creeks and cells of the brain might the better be distinguished: that is, the fancy in the forehead, the discoursing or reasonable part in the middle, and memory in the hindermost part.

Q. Why doth a man lift up his head towards the heavens when he doth imagine? A. Because the imagination is the fore part of the head or brain, and therefore it lifteth up itself, that the creeks or cells of the imagination may be opened, and that the spirits which help the imagination, and are fit for that purpose, having their concourse thither, may help the imagination.

Q. Why doth a man, when he museth or thinketh of things past, look towards the earth? A. Because the cell or creek which is behind, is the creek or chamber of the memory; and therefore that looketh towards the heavens

when the head is bowed down, and so that cell is open, to the end that the spirits which perfect the memory should enter in.

Q. Why is not the head fleshy, like other parts of the body? A. Because the head would be too heavy, and would not stand steadily. Also, a head loaded with flesh betokens an evil complexion.

Q. Why is the head subject to aches and griefs? A. By reason that evil humours, which proceed from the stomach, ascend up to the head and disturb the brain, and so cause pain in the head: sometimes it proceeds from overmuch filling the stomach, because two great sinews pass from the brain to the mouth of the stomach, and therefore these two parts do always suffer grief together.

Q. Why have women the headache oftener than men? A. By reason of their monthly terms, which men are not troubled with; and by which a moist, unclean, and venomous fume is produced, that seeks passage upwards, and so causes the headache.

Q. Why is the brain white? A. 1. Because it is cold, and coldness is the mother of white. 2. Because it may receive the similitude and likeness of all colours, which the white colour can best do, because it is most simple.

Q. Why are all the senses in the head? A. Because the brain is there, on which all the

senses depend, and are directed by it; and, consequently, it maketh all the spirits to feel, and governeth all the membranes.

Q. Why cannot a person escape death if the brain or heart be hurt? A. Because the brain and heart are the two principal parts which concern life; and, therefore, if they be hurt, there is no remedy left for cure.

Q. Why is the brain moist? A. Because it may easily receive an impression, which moisture can best do, as it appeareth in wax, which doth easily receive the print of the seal when soft.

Q. Why is the brain cold? A. 1. Because that by this coldness it may clear the understanding of man, and make it subtle. 2. That by the coldness of the brain the heat of the heart may be tempered.

Of the Eyes.

Q. Why have you one nose and two eyes? A. Because light is more necessary for us than smelling; and therefore it doth proceed from the goodness of Nature, that if we receive any hurt or loss of one eye, the other may remain.

Q. Why have children great eyes in their youth, which become small as they grow up? A. It proceeds from the want of fire, and from the assemblage and meeting together of the

light and humour; the eyes being lightened by the sun, which doth lighten the easy humour thereof and purge them; and, in the absence of the sun, those humours become dark and black, and the sight not so good.

Q. Why does the blueish gray eye see badly in the day time, and well in the night? A. Because grayness is light and shining of itself, and the spirits with which we see are weakened in the day-time and strengthened in the night.

Q. Why are men's eyes of divers colours? A. By reason of diversity of humours. The eye hath four coverings and three humours. The first covering is called consolidative, which is the outermost, strong and fat. The second is called a horny skin or covering, of the likeness of a horn; which is a clear covering. The third, uvea, of the likeness of a black grape. The fourth is called a cobweb. The first humour is called *abungines*, from its likeness unto the white of an egg. The second *glarial*; that is, clear, like unto crystalline. The third, *vitreous*; that is, clear as glass. And the diversity of humours causeth the diversity of the eye.

Q. Why are men who have but one eye good archers? and why do good archers commonly shut one eye? And why do such as behold the stars look through a trunk with one eye? A.

This matter is handled in the perspective arts; and the reason is, as it doth appear in *The Book of Causes*, because that every virtue and strength united and knit together is stronger than when dispersed and scattered. Therefore all the force of seeing dispersed in two eyes, the one being shut, is gathered into the other; and so the light is fortified in him; and by consequence he doth see better and more certainly with one eye being shut, than when both are open.

Q. Why do those that drink and laugh much shed most tears? A. Because that while they drink and laugh without measure, the air which is drawn in doth not pass out through the windpipe, and so with force is directed and sent to the eyes, and by their pores passing out, doth expel the humours of the eyes; which humour being so expelled brings tears.

Q. Why do such as weep much, urine but little? A. Because the radical humidity of a tear and of urine are of one and the same nature; and therefore, where weeping doth increase, urine diminishes. And that they are of one nature is plain to the taste, because they are both salt.

Q. Why do some that have clear eyes see nothing? A. By reason of the oppilation and naughtiness of the sinews with which we see; for the temples being destroyed, the strength

of the light cannot be carried from the brain to the eye.

Q. Why is the eye clear and smooth like glass? A. 1. Because the things which may be seen are better beaten back from a smooth thing than otherwise, that thereby the sight should strengthen. 2. Because the eye is moist above all parts of the body, and of a waterish nature; and as the water is clear and smooth, so likewise is the eye.

Q. Why do men and beasts who have their eyes deep in their head see best far off? A. Because the force and power by which we see is dispersed in them, and doth go directly to the thing which is seen. Thus, when a man doth stand in a deep ditch or well, he doth see in the day-time the stars of the firmament; because then the power of the sight and of the beams are not scattered.

Q. Wherefore do those men who have eyes far out in their head not see far distant? A. Because the beams of the sight which pass from the eye are scattered on every side, and go not directly unto the thing that is seen, and therefore the sight is weakened.

Q. Why are many beasts born blind, as lions' whelps and dogs' whelps? A. Because such beasts are not yet of perfect ripeness and maturity, and the course of nutriment doth not work in them. Thus, the swallow, whose eyes,

if they were taken out when they are young in their nest, would grow in again. And this is the case in many beasts who are brought forth before their time, as it were dead, as bears' whelps.

Q. Why do the eyes of a woman that hath her flowers stain new glass? And why doth a basilisk kill a man with his sight? A. 1. When the flowers do run from a woman, then a most venomcus air is distilled from them, which doth ascend into the woman's head; and she having pain in her head, doth wrap it up with a cloth or handkerchief; and, because the eyes are full of insensible holes, which are called pores, there the air seeketh a passage and infects the eyes, which are full of blood. The eyes also appear dropping and full of tears, by reason of the evil vapour that is in them; and these vapours are incorporated and multiplied till they come to the glass before them; and by reason that such a glass is round, clear, and smooth, it doth easily receive that which is unclean. 2. The basilisk is a very venomous and infectious animal, and there pass from his eyes venomous vapours, which are multiplied upon the thing which is seen by him, and even unto the eye of man; the which venomous vapours or humours entering into the body do infect him, and so in the end the man dieth. And this is also the reason why the basilisk, look-

ing upon a shield perfectly well made with fast clammy pitch, or any hard smooth thing, doth kill itself, because the humours are beaten back from the hard smooth thing unto the basilisk, by which beating back he is killed.

Q. Why is the sparkling in cats' eyes and wolves' eyes seen in the dark and not in the light? A. Because that the greater light doth darken the lesser; and therefore in a greater light the sparkling cannot be seen; but the greater the darkness, the easier it is seen, and is made more strong and shining.

Q. Why is the sight retreated and refreshed by a green colour? A. Because green doth merely move the sight, and therefore doth comfort it; but this doth not black nor white colours, because these colours do vehemently stir and alter the organ and instrument of the sight, and therefore make the greater violence; and by how much the more violent the thing is which is felt or seen, the more it doth destroy and weaken the sense.

Of the Nose.

Q. Why doth the nose stand out farther than any other part of the body? A. 1. Because the nose is, as it were, the sink of the brain, by which the phlegm of the brain is purged; and therefore it doth stand forth,

lest the other parts should be defiled. 2. Because the nose is the beauty of the face, and doth smell.

Q. Why hath man the worst smell of all creatures? A. Because man hath most brains of all creatures; and, therefore, by exceeding coldness and moisture, the brain wanteth a good disposition, and, by consequence, the smelling instrument is not good; yea, some men have no smell.

Q. Why have vultures and cormorants a keen smell? A. Because they have a very dry brain; and, therefore, the air carrying the smell is not hindered by the humidity of the brain, but doth presently touch its instrument; and, therefore, vultures, tigers, and other ravenous beasts, have been known to come five hundred miles after dead bodies.

Q. Why did nature make the nostrils? A. 1. Because, the mouth being shut, we draw breath in by the nostrils to refresh the heart. 2. Because the air which proceedeth from the mouth doth savour badly, because of the vapours which rise from the stomach, but that which we breathe from the nose is not noisome. 3. Because the phlegm which doth proceed from the brain is purged by them.

Q. Why do men sneeze? A. That the expulsive virtue and power of the sight should thereby be purged, and the brain also, from su-

perfluities: because, as the lungs are purged by coughing, so is the sight and brain by sneezing; and therefore physicians give sneezing medicaments to purge the brain; and thus it is, such sick persons that cannot sneeze die quickly, because it is a sign their brain is wholly stuffed with evil humours, which cannot be purged.

Q. Why do not such as are apoplectic sneeze; that is, such as are subject easily to bleed? A. Because the passages or ventricles of the brain are stopped; and if they could sneeze, their apoplexy would be loosed.

Q. Why does the heat of the sun provoke sneezing, and not the heat of the fire? A. Because the heat of the sun doth dissolve, but not consume, and therefore the vapour dissolved is expelled by sneezing; but the heat of the fire doth dissolve and consume, and therefore doth rather hinder sneezing than provoke.

Of the Ears.

Q. Why do beasts move their ears, and not men? A. Because there is a certain muscle near the under-jaw which doth cause motion in the ear; and therefore that muscle being extended and stretched, men do not move their ears, as it hath been seen in divers men; but

all beasts do use that muscle or fleshy sinew, and therefore do move their ears.

Q. Why is rain prognosticated by the pricking up of asses' ears? A. Because the ass is of a melancholic constitution, and the approach of rain produceth that effect upon such a constitution. In the time of rain all beasts prick up their ears, but the ass before it comes.

Q. Why have some animals no ears. A. Nature giveth unto every thing that which is fit for it; but if she had given birds ears, their flying would have been hindered by them. Likewise fish want ears, because they would hinder their swimming, and have only certain little holes through which they hear.

Q. Why have bats ears, although of the bird kind? A. Because they are partly birds in nature, in that they fly, by reason whereof they have wings; and partly they are hairy, and seem to be of the nature of mice, therefore nature hath given them ears.

Q. Why have men only round ears? A. Because the shape of the whole and of the parts should be proportionable, and especially in all things of one nature; for as a drop of water is round, so the whole water; and so, because a man's head is round, the ears incline towards the same figure; but the heads of beasts are somewhat long, and so the ears are drawn into length likewise.

Q. Why hath nature given all living creatures ears? A. 1. Because with them they should hear. 2. Because by the ear choleric superfluity is purged; for as the head is purged of phlegmatic superfluity by the nose, so from choleric by the ears.

Of the Mouth.

Q. Why hath the mouth lips to compass it? A. Because the lips cover and defend the teeth; for it would be unseemly if the teeth were always seen. Also, the teeth being of a cold nature, would soon be hurt if they were not covered with lips.

Q. Why has a man two eyes, two ears, and but one mouth? A. Because a man should speak but little, and hear and see much. And by hearing and the light we see the difference of things.

Q. Why hath a man a mouth? A. 1. Because the mouth is the gate or door of the stomach. 2. Because the meat is chewed in the mouth, and prepared and made ready for the first digestion. 3. Because the air drawn into the hollow of the mouth for the refreshing of the heart is made pure and subtle.

Q. Why are the lips moveable? A. For the the purpose of forming the voice and words, which cannot be perfectly done without them.

For, as without *a*, *b*, *c*, there is no writing, so without the lips no voice can be well formed.

Q. What causes man to yawn or gape? A. It proceeds from the thick fume and vapours that fill the jaws; by the expulsion of which is caused the stretching out and expansion of the jaws, and opening of the mouth.

Q. Why doth a man gape when he seeth another doing the same? A. It proceeds from the imagination. And this is proved by the similitude of the ass, who, by reason of his melancholy, doth retain his superfluity for a long time, and would neither eat nor make water unless he should hear another doing the like.

Of the Teeth.

Q. Why do the teeth only, amongst all other bones, experience the sense of feeling? A. That they may discern heat and cold, that hurt them, which other bones need not.

Q. Why have men more teeth than women? A. By reason of the abundance of heat and blood, which is more in men than women.

Q. Why do the teeth grow to the end of our life, and not the other bones? A. Because otherwise they would be consumed with chewing and grinding.

Q. Why do the teeth only come again when they fail, or be taken out, and other bones be-

ing taken away grow no more? A. Because all other bones are engendered of the humidity which is called radical, and so they breed in the womb of the mother; but the teeth are engendered of nutritive humidity, which is renewed and increased from day to day.

Q. Why do the fore-teeth fall in youth, and grow again, and not the cheek teeth? A. From the defect of matter, and from the figure; because the fore-teeth are sharp, and the others broad. Also, it is the office of the fore-teeth to cut the meat, and therefore they are sharp; and the office of the other to chew the meat, and therefore they are broad in fashion, which is fittest for that purpose.

Q. Why do the fore-teeth grow soonest? A. Because we want them sooner in cutting than the others in chewing.

Q. Why do the teeth grow black in human creatures in their old age? A. It is occasioned by the corruption of the meat, and the corruption of phlegm, with a choleric humour.

Q. Why are colt's teeth yellow, and of the colour of saffron, when they are young, and become white when they grow up? A. Because horses have abundance of watery humours in them, which in their youth are digested and converted into grossness; but in old age heat diminishes, and the watery humours remain, whose proper colour is white.

Q. Why did nature give living creatures teeth? A. To some to fight with, and for defence of their lives, as unto wolves and bats; unto some to eat with, as unto horses; unto some for the forming of voice, as unto men.

Q. Why do horned beasts want their upper teeth? A. Horns and teeth are caused by the same matter, that is, nutrimental humidity, and therefore the matter which passeth into horns turneth not into teeth, consequently they want the upper teeth. And beasts cannot chew well; therefore, to supply the want of teeth, they have two stomachs, from whence it returns, and they chew it again; then it goes into the other to be digested.

Q. Why are some creatures brought forth with teeth, as kids and lambs; and some without, as men? A. Nature doth not want unnecessary things, nor abound in superfluous; and therefore because these beasts, not long after they are fallen, do need teeth, they are fallen with teeth; but men, being nourished by their mother, for a long time, do not stand in need of teeth.

Of the Tongue.

Q. Why is the tongue full of pores? A. Because the tongue is the means whereby we taste; and through the mouth, in the pores of the

tongue, doth proceed the sense of tasting. Again, it is observed, that frothy spittle is sent into the mouth by the tongue from the lungs, moistening the meat, and making it ready for digestion.

Q. Why do the tongues of such as are sick of agues judge all things bitter? A. Because the stomachs of such people are filled with choleric humours; and choler is very bitter, as appeareth by the gall; therefore, this bitter fume doth infect their tongues; and so the tongue, being full of these tastes, doth judge every thing bitter.

Q. Why doth the tongue water when we hear sour and sharp things spoken of? A. Because the imaginative virtue or power is of greater force than the power and faculty of tasting; and when we imagine a taste, we conceive the power of tasting as a mean; there is nothing felt by the taste, but by means of the spittle the tongue doth water.

Q. Why do some persons stammer and lisp? A. Sometimes through the moistness of the tongue and brain, as in children, who cannot speak plainly nor pronounce many letters. Sometimes it happeneth by reason of the shrinking of certain sinews which go to the tongue, which are corrupted with phlegm.

Q. Why are the tongues of serpents and mad dogs venomous? A. Because of the malignity

and tumosity of the venomous humour which predominates in them.

Q. Why is a dog's tongue good for medicine, and a horse's tongue pestiferous? A. By reason of some secret property, or that the tongue of a dog is full of pores, and so doth draw and take away the viscosity of a wound. It is observed that a dog hath some humour in his tongue, with which, by licking, he doth heal; but the contrary effect is in the lick of a horse's tongue.

Q. Why is spittle white? A. By reason of the continual moving of the tongue, whereof heat is engendered, which doth make this superfluity white; this is seen in the froth of water.

Q. Why is spittle unsavoury and without taste? A. If it had a certain determinate taste, then the tongue would not taste at all, but only give the taste of spittle, and could not distinguish others.

Q. Why does the spittle of one that is fasting heal an imposthume? A. Because it is well digested, and made subtle.

Q. Why do some abound in spittle more than others? A. This doth proceed of a phlegmatic complexion, which doth predominate in them and such are liable to a quotidian ague, which ariseth from the predominance of phlegm: the contrary, in those that spit little, because

heat abounds in them, which consumes the humidity of the spittle; and so the defect of spittle is a sign of fever.

Q. Why is the spittle of a man who is fasting more subtle than of one who is full? A. Because the spittle is without the viscosity of meat, which is wont to make the spittle of one who is full, gross and thick.

Q. From whence proceedeth the spittle of man? A. From the froth of the lungs, which, according to the physicians, is the seat of the phlegm.

Q. Why are beasts when going together for generation very full of foam and froth? A. Because then the lights and heart are in great motion of lust; therefore there is engendered in them much frothy matter.

Q. Why have not birds spittle? A. Because they have very dry lungs.

Q. Why doth the tongue sometimes lose the use of speaking? A. It is occasioned by a palsy or apoplexy, which is a sudden effusion of blood, and by gross humours; and sometimes also by infection of *spiritus animalis* in the middle cell of the brain, which hinders the spirits from being carried to the tongue.

Of the Roof of the Mouth.

Q. Why are fruits, before they are ripe, of a bitter or sour relish, and afterwards sweet? A. A sour relish or taste proceeds from coldness and want of heat in gross and thick humidity; but a sweet taste is produced by sufficient heat; therefore, in the ripe fruit humidity is subtle through the heat of the sun, and such fruit is commonly sweet; but before it is ripe, as humidity is gross or subtle for want of heat, the fruit is bitter or sour.

Q. Why are we better delighted with sweet tastes than with bitter or any other? A. Because a sweet thing is hot and moist, and through its heat dissolves and consumes superfluous humidities, and by this humidity immundicity is washed away; but a sharp eager taste, by reason of the cold which predominates in it, doth bind overmuch, and prick and offend the parts of the body in purging, and therefore we do not delight in that taste.

Q. Why doth a sharp taste, as that of vinegar, provoke appetite rather than any other? A. Because it is cold, and doth cool. For it is the nature of cold to desire and draw, and therefore it is the cause of appetite.

Q. Why do we draw in more air than we

breathe out? A. Because much air is drawn in that is converted into nutriment, and with the vital spirits is contained in the lungs. Therefore a beast is not suffocated so long as it receives air with its lungs, in which some part of the air remaineth also.

Q. Why doth the air seem to be expelled and put forth, seeing the air is invisible, by reason of its variety and thinness? A. Because the air which is received in us, is mingled with vapours and fumes from the heart, by reason whereof it is made thick, and so is seen. And this is proved by experience, because that in winter we see our breath; for the coldness of the air doth bind the breath mixed with fume, and so it is thickened and made gross, and by consequence is seen.

Q. Why have some persons stinking breath? A. Because of evil fumes that arise from the stomach. And sometimes it doth proceed from the corruption of the airy parts of the body, as the lungs. The breath of lepers is so infected, that it would poison birds if near them, because the inward parts are very corrupt.

Q. Why are lepers hoarse? A. Because the vocal instruments are corrupted, that is, the lights.

Q. Why do persons become hoarse? A. Because of the rheum descending from the brain filling the conduit of the lights: and sometimes

through imposthumes of the throat, or rheum gathering in the neck.

Q. Why have the females of all living creatures the shrillest voice, the crow only excepted, and a woman a shriller and smaller voice than a man? A. By reason of the composition of the veins the vocal arteries of voice are formed, as appears by this similitude, that a small pipe sounds shriller than a great. Also in women, because the passage where the voice is formed is made narrow and strait, by reason of cold, it being the nature of cold to bind; but in men, the passage is open and wider through heat, because it is the property of heat to open and dissolve. It proceedeth in women through the moistness of the lungs, and weakness of the heat. Young and diseased men have sharp and shrill voices from the same cause.

Q. Why doth the voice change in men at fourteen, and in women at twelve; in men when they begin to yield seed; in women when their breasts begin to grow? A. Because then the beginning of the voice is slackened and loosened; and this is proved by the similitude of the string of an instrument let down or loosened which gives a great sound; and also because creatures that are gelded, as eunuchs, capons, &c. have softer and slenderer voices than others, by the want of their stones.

Q. Why do small birds sing more and louder

than great ones, as appears in the lark and nightingale? A. Because the spirits of small birds are subtle and soft, and the organ conduit strait, as appeareth in a pipe; therefore their notes following easily at desire they sing very soft.

Q. Why do bees, wasps, locusts, and many other such like insects, make a noise, seeing they have no lungs, nor instruments of voice? A. Because in them there is a certain small skin, which, when struck by the air, causeth a sound.

Q. Why do not fish make a sound? A. Because they have no lungs, but only gills, nor yet a heart; and therefore they need not the drawing in of the air, and by consequence they make no noise, because a noise is a percussion of the air which is drawn.

Of the Neck.

Q. Why hath a living creature a neck? A. Because the neck is the supporter of the head, and therefore the neck is in the middle between the head and the body, to the intent that by it and by its sinews, motion and sense of the body might be conveyed through all the body; and that by means of the neck, the heart, which is very hot, might be separated from the brain.

Q. Why do some creatures want necks, as ser-

pents and fishes? A. Because they want hearts, and therefore want that assistance which we have spoken of; or else they have a neck in some inward part of them, which is not distinguished outwardly.

Q. Why is the neck full of bones and joints? A. That it may bear and sustain the head the better. Also, because the backbone is joined to the brain in the neck, and from thence it receives marrow, which is of the substance of the brain.

Q. Why have some creatures long necks, as cranes, storks, and such like? A. Because such birds seek their food at the bottom of waters. And some creatures have short necks, as sparrows, hawks, &c. because such are ravenous, and therefore for strength have short necks; as appeareth in the ox, which has a short neck and strong.

Q. Why is the neck hollow, and especially before, about the tongue? A. Because there are two passages, whereof the one doth carry the meat to the nutritive instrument, or stomach and liver, which is called by the Greeks *Œsophagus;* and the other is the windpipe.

Q. Why is the artery made with rings and circle? A. The better to bow and give a good sounding.

Of the Shoulders and Arms.

Q. Why hath a man shoulders and arms? A. To lift and carry burdens.

Q. Why are the arms round? A. For the swifter and speedier work.

Q. Why are the arms thick? A. That they may be strong to lift and bear burdens, and thrust and give a strong blow; so their bones are thick, because they contain much marrow, or they would be easily corrupted and injured.

Q. Why do the arms become small and slender in some diseases, as in mad men, and such as are sick of the dropsy? A. Because all the parts of the body do suffer the one with the other; and therefore one member being in grief, all the humours do concur and run thither to give succour and help to the aforesaid grief.

Q. Why have brute beasts no arms? A. Their fore feet are instead of arms, and in their place.

Of the Hands.

Q. For what use hath a man hands, and an ape also like unto a man? A. The hand is an instrument that a man doth especially make

use of, because many things are done by the hands, and not by any other part.

Q. Why are some men ambo-dexter, that is, they use the left hand as the right? A. By reason of the great heat of the heart, and for the hot bowing of the same; for it is that which makes a man as nimble of the left hand as of the right.

Q. Why are the fingers full of joints? A. To be more fit and apt to receive and keep what are put in them.

Q. Why hath every finger three joints, and the thumb but two? A. The thumb hath three, but the third is joined to the arm, therefore is stronger than the other fingers; and is called pollox, or polico, that is, to excel in strength.

Q. Why are the fingers of the right hand nimbler than the fingers of the left? A. It proceedeth from the heat that predominates in those parts, and causeth great agility.

Of the Nails.

Q. From whence do nails proceed? A. Of the tumosity and humours, which are resolved and go into the extremities of the fingers; and they are dried through the power of the external air, and brought to the hardness of horn.

Q. Why do the nails of old men grow black

and pale? A. Because the heat of the heart decaying, causeth their beauty to decay also.

Q. Why are men judged to be good or evil complexioned by the colour of their nails? A. Because they give witness of the goodness or badness of the heart, and therefore of the complexion; for if they be somewhat red, they betoken choler well tempered; but if they be yellowish or black, they signify melancholy.

Q. Why do white spots appear in the nails? A. Through mixture of phlegm with the nutriment.

Of the Paps and Dugs.

Q. Why are the paps placed upon the breasts? A. Because the breast is the seat of the heart, which is most hot; and therefore the paps grow there, to the end that the menses being conveyed thither, as being near to the heat of the heart, should the sooner be digested, perfected, and converted into the matter and substance of the milk.

Q. Why are the paps below the breasts in beasts, and above the breasts in women? A. Because woman goes upright, and has two legs only: and therefore if her paps were below her breasts, they would hinder her going; but beasts having four feet prevents that inconveniency.

Q. Why have not men as great paps and

breasts as women? A. Because men have not monthly terms, and therefore have no vessel deputed for them.

Q. Whether are great, small, or middle-sized paps best for children to suck? A. In great ones the heat is dispersed, and there is no good digestion of the milk; but in small ones the power and force is strong, because a virtue united is strongest, and by consequence there is a good digestion of the milk.

Q. Why do the paps of young women begin to grow about 13 or 15 years of age? A. Because then the flowers have no course to the teats, by which the young one is nourished, but follow their ordinary course, and therefore wax soft.

Q. Why hath a woman who is with child of a boy, the right pap harder than the left? A. Because the male child is conceived in the right side of the mother; and therefore the flowers do run to the right pap and make it hard.

Q. Why doth it show weakness of the child, when the milk doth drop out of the paps before the woman is delivered? A. Because the milk is the proper nutriment of the child in the womb of the mother; therefore if the milk run out, it is a token that the child is not nourished, and consequently is weak.

Q. Why doth the hardness of the paps betoken the health of the child in the womb? A. Be-

cause the flowers are converted into milk, and that milk doth sufficiently nourish the child, and thereby strength is signified.

Q. Why are women's paps hard when they be with child, and soft at other times? A. Because they swell then, and are puffed up; and the great moisture which proceeds from the flowers doth run into the paps, which at other seasons remaineth in the matrix or womb, and is expelled by the place deputed for that end.

Q. By what means doth the milk of the paps come to the matrix or womb? A. There is a certain knitting aud coupling of the paps with the womb, and there are certain veins which the midwives do cut in the time of the birth of the child, and by those veins the milk flows in at the navel of the child, and so it receives nourishment by the navel.

Q. Why is it a sign of a male child in the womb, when the milk that runneth out of a woman's breast is thick, and not much, and of a female when it is thin? A. Because a woman that goeth with a boy, hath a great heat in her, which doth perfect the milk and make it thick; but she who goes with a girl hath not so much heat, and therefore the milk is undigested, imperfect, watery, and thin, and will swim above the water if it be put into it.

Q. Why is the milk white, seeing the flow-

ers are red, of which it is engendered? A. Because blood which is well purged and concocted becomes white, as appeareth in flesh whose proper colour is red, and being boiled is white. Also, because every humour which is engendered of the body, is made like unto that part in colour where it is engendered, as near as it can be; but because the flesh of the paps is white, therefore the colour of the milk is white.

Q. Why doth a cow give milk more abundantly than other beasts? A. Because she is a great eating beast, and where there is much monthly superfluity engendered, there is much milk; because it is nothing else but that blood purged and tried.

Q. Why is not milk wholesome? A. 1. Because it curdeth in the stomach, whereof an evil breath is bred. 2. Because the milk doth grow sour in the stomach, where evil humours are bred, and infect the breath.

Q. Why is milk bad for such as have the headache? A. Because it is easily turned into great fumosities, and hath much terrestrial substance in it, the which ascending doth cause the headache.

Q. Why is milk fit nutriment for infants? A. Because it is a natural and usual food, and they were nourished by the same in the womb.

Q. Why are the white-meats made of a new-milked cow good? A. Because milk at that

time is very spungy, expels many fumosities, and, as it were, purges at that time.

Q. Why do physicians forbid the eating of fish and milk at the same time? A. Because they produce a leprosy, and because they are phlegmatic.

Q. Why have not birds and fish milk and paps? A. Because paps would hinder the flight of birds. And although fish have neither paps nor milk, the females cast much spawn, which the male touches with a small gut, and causes their kind to continue in succession.

Of the Back.

Q. Why have beasts backs? A. 1. Because the back is the way and mien of the body, from which are extended and spread throughout all the sinews of the backbone. 2. Because it should be a guard and defence for the soft parts of the body, as for the stomach, liver, lights, and such like. 3. Because it is the foundation of all the bones, as the ribs, fastened to the backbone.

Q. Why hath the backbone so many joints or knots, called *spondelia?* A. Because the moving and bending it, without such joints, could not be done; and therefore they are wrong who say that elephants have no such joints, for without them they could not move.

Q. Why do fish die after their backbones are broken? A. Because in fish the backbone is instead of the heart: now the heart is the first thing that lives, and the last that dies; and when that bone is broken, fish can live no longer.

Q. Why doth a man die soon after the marrow is hurt or perished? A. Because the marrow proceeds from the brain, which is the principal part of a man.

Q. Why have some men the piles? A. Those men are cold and melancholy, which melancholy first passes to the spleen, its proper seat, but there cannot be retained, for the abundancy of blood; for which reason it is conveyed to the backbone, where there are certain veins which terminate in the back, and receive the blood. When those veins are full of the melancholy blood, then the conduits of nature are opened, and the blood issues out once a month, like women's terms. Those men who have this course of blood, are kept from many infirmities, such as the dropsy, plague, &c.

Q. Why are the Jews much subject to this disease? A. Because they eat much phlegmatic and cold meats, which breed melancholy blood, which is purged with the flux. Another reason is, motion causes heat, and heat digestion; but strict Jews never move, labour, nor [illegible]verse much, which breeds a coldness in them,

and hinders digestion, causing melancholic blood, which is by this means purged out.

Of the Heart.

Q. Why are the lungs light, spungy, and full of holes? A. That the air may be received into them for cooling the heart, and expelling humours, because the lungs are the fan of the heart; and as a pair of bellows is raised up by taking in the air, and shrunk by blowing it out, so likewise the lungs draw the air to cool the heart, and cast it out, lest through too much air drawn in, the heart should be suffocated.

Q. Why is the flesh of the lungs white? A. Because they are in continual motion.

Q. Why have those beasts only lungs that have hearts? A. Because the lungs be no part for themselves, but for the heart; and therefore it were superfluous for those creatures to have lungs that have no hearts.

Q. Why do such creatures as have no lungs want a bladder? A. Because such drink no water to make their meat digest, and need no bladder for urine; as appears in such birds who do not drink at all, viz. the falcon and sparrow-hawk.

Q. Why is the heart in the midst of the body? A. That it may impart life to all parts of the body; and therefore it is compared to

the sun, which is placed in the midst of the planets, to give light to them all.

Q. Why only in men is the heart on the left side? A. To the end the heat of the heart may mitigate the coldness of the spleen; for the spleen is the seat of melancholy, which is on the left side also.

Q. Why is the heart first engendered; for the heart doth live and die last? A. Because the heart is the beginning and original of life, and without it no part can live. For of the seed retained in the matrix, there is engendered a little small skin, which compasses the seed; whereof first the heart is made of the purest blood; then of blood not so pure, the liver; and of thick and cold blood, the marrow and brain.

Q. Why are beasts bold that have little hearts? A. Because in a little heart the heat is well united and vehement, and the blood touching it, doth quickly heat it, and is speedily carried to the other parts of the body, which give courage and boldness.

Q. Why are creatures with a large heart timorous, as the hare? A. The heart is dispersed in such a one, and not able to heat the blood which cometh to it; by which means fear is bred.

Q. How is it that the heart is continually moving? A. Because in it there is a certain

spirit which is more subtle than air, and by reason of its thickness and rarefaction seeks a larger space, filling the hollow room of the heart, hence the dilating and opening of the heart; and because the heart is earthly, the thrusting and moving ceasing, its parts are at rest, tending downwards. As a proof of this, take an acorn, which, if put into the fire, the heat dissolves its humidity, therefore occupies a greater space, so that the rind cannot contain it, but puffs up and throws it into the fire. The like of the heart. Therefore the heart of a living creature is triangular, having its least part towards its left side, and the greater towards the right; and doth also open and shut in the least part, by which means it is in continual motion; the first motion is called *diastole*, that is, extending the breast or heart; the other *systole*, that is shutting of the heart; and from these all the motions of the body proceed, and that of the pulse which physicians feel.

Q. How comes it that the flesh of the heart is so compact and knit together? A. Because in thick compacted substances heat is strongly received and united. And because the heart with its heat should moderate the coldness of the brain, it is made of that fat flesh apt to keep a strong heat.

Q. How comes the heart to be the hottest part of all living creatures? A. It is so con-

pacted as to receive heat best, and because it should mitigate the coldness of the brain.

Q. Why is the heart the beginning of life? A. It is plain that in it the vital spirit is bred, which is the heat of life; and therefore the heart having two receptacles, viz. the right and the left, the right hath more blood than spirits; which spirit is engendered to give life and vivify the body.

Q. Why is the heart long and sharp like a pyramid? A. The round figure hath an angle, therefore the heart is round, for fear any poison or hurtful matter should be retained in it; and because that figure is fittest for motion.

Q. How comes the blood chiefly to be in the heart? A. The blood in the heart has its proper or efficient place, which some attribute to the liver; and therefore the heart doth not receive blood from any other parts, but all other parts from it.

Q. How happens it that some creatures want a heart? A. Although they have no heart, yet they have somewhat that answers for it, as appears in eels and fish that have the backbone instead of the heart.

Q. Why does the heart beat in some creatures when the head is off, as in birds and hens? A. Because the heart lives first and dies last, and therefore beats longer than other parts.

Q. Why doth the heat of the heart sometimes fail of a sudden, as in those who have the falling sickness? A. This proceeds from the defect of the heart itself, and of certain small skins with which it is covered, which being infected and corrupted, the heart faileth on a sudden: sometimes only by reason of the parts adjoining; and therefore, when any venomous humour goes out of the stomach, that turns the heart and parts adjoining, that causeth the fainting.

Of the Stomach.

Q. For what reason is the stomach large and wide? A. Because in it the food is first concocted or digested as it were in a pot, to the end that that which is pure should be separated from that which is not; and therefore, according to the quantity of food, the stomach is enlarged.

Q. How comes it that the stomach is round? A. Because if it had angles and corners, food would remain in them, and breed ill humours, so that a man would never want agues, which humours are evacuated and consumed, and not hid in any such corners, by the roundness of the stomach.

Q. How comes the stomach to be full of sinews? A. Because the sinews can be extend-

ed and enlarged; and so is the stomach when it is full; but when empty it is drawn together; and therefore nature provides those sinews.

Q. How comes the stomach to digest? A. Because of the heat which is in it, and comes from the parts adjoining, that is, the liver and the heart. For as we see in metals, the heat of the fire takes away the rust and dross from iron, the silver from tin, and gold from copper; so also by digestion the pure is separated from the impure.

Q. For what reason doth the stomach join the liver? A. Because the liver is very hot, and with its heat helps digestion, and provokes appetite.

Q. Why are we commonly cold after dinner? A. Because then the heat goes to the stomach to further digestion, and so the other parts grow cold.

Q. Why is it hurtful to study soon after dinner? A. Because when the heat labours to help the imagination in study, it ceases from digesting the food, which remains undigested; therefore people should walk some time after meals.

Q. How cometh the stomach slowly to digest meat? A. Because it swims in the stomach. Now, the best digestion is in the bottom of the stomach, because the fat descends not there:

such as eat fat meat are very sleepy, by reason that digestion is hindered.

Q. Why is all the body wrong, when the stomach is uneasy? A. Because the stomach is knit with the brain, heart, and liver, which are the principal parts in man; and when it is not well the others are indisposed. Again, if the first digestion be hindered, the others are also hindered; for in the first digestion is the beginning of the infirmity of the stomach.

Q. Why are young men sooner hungry than old men? A. Young men do digest for three causes; 1. For growing: 2. For restoring of life: and, 3. For conservation of life. Also, young men are hot and dry, and therefore the heat doth digest more, and by consequence they desire more.

Q. Why do physicians prescribe that men should eat when they have an appetite? A. Because much hunger and emptiness will fill the stomach with naughty rotten humours, which are drawn in instead of meat; for, if we fast over night, we have an appetite to meat, but none in the morning; as then the stomach is filled with naughty humours, and especially its mouth, which is no true filling, but a deceitful one. And therefore, after we have eaten a little, our stomach comes to us again; for the first morsel, having made clean the mouth of the stomach, doth provoke the appetite.

Q. Why do physicians prescribe that we should not eat too much at a time, but by little and little? A. Because when the stomach is full, the meat doth swim in it, which is a dangerous thing. Another reason is, that a very green wood doth put out the fire, so much meat chokes the natural heat and puts it out; and therefore the best physic is to use temperance in eating and drinking.

Q. Why do we desire change of meats according to the change of times; as in winter, beef, pork, mutton; in summer, light meats, as veal, lamb, &c.? A. Because the complexion of the body is altered and changed according to the time of the year. Another reason is, that this proceeds from the quality of the season; because the cold in winter doth cause a better digestion.

Q. Why should not the meat we eat be as hot as pepper and ginger? A. Because as hot meat doth inflame the blood, and dispose it to a leprosy; so, on the contrary, meat too cold doth mortify and chill the blood. Our meat should not be over sharp, because it wastes the constitution; too much sauce doth burn the entrails, and inclineth to often drinking; raw meat doth the same; and over sweet meats to constipate and cling the veins together.

Q. Why is it a good custom to eat cheese after dinner, and pears after all meat? A. Because,

by reason of its earthliness and thickness it tendeth down towards the bottom of the stomach, and so putteth down the meat; and the like of pears. Note, that new cheese is better than old; and that old soft cheese is very bad, and causeth the headache and stopping of the liver; and the older the worse. Whereof it is said, that cheese digesteth all things but itself.

Q. Why are nuts good after cheese, as the proverb is, After fish nuts, and after flesh cheese? A. Because fish is of hard digestion, and doth easily putrify and corrupt; and nuts are a remedy against poison.

Q. Why is it unwholesome to wait long for one dish after another, and to eat of divers kinds of meats? A. Because the first begins to digest when the last is eaten, and so digestion is not equally made. But yet this rule is to be noted, dishes light of digestion, as chickens, kids, veal, soft eggs, and such like, should be first eaten: because, if they should be first served and eaten, and were digested, they would hinder the digestion of the others; and the light meats not digested would be corrupted in the stomach, and kept in the stomach violently, whereof would follow belching, loathing, headache, bellyache, and great thirst. It is very hurtful too, at the same meal, to drink

wine and milk, because they are productive of leprosy.

Q. Whether is meat or drink best for the stomach? A. Drink is sooner digested than meat, because meat is of greater substance, and more material than drink, and therefore meat is harder to digest.

Q. Why is it good to drink after dinner? A. Because the drink will make the meat readier to digest. The stomach is like unto a pot which doth boil meat, and therefore physicians do counsel to drink at meals.

Q. Why is it good to forbear a late supper? A. Because there is little moving or stirring after supper, and so the meat is not sent down to the bottom of the stomach, but remaineth undigested, and so breeds hurts; therefore a light supper is best.

Of the Blood.

Q. Why is it necessary that every living thing that hath blood have also a liver? A. Because the blood is first made in the liver, its seat, being drawn from the stomach by certain principal veins, and so engendered.

Q. Why is the blood red? A. 1. It is like the part in which it is made, viz. the liver which is red. 2. It is likewise sweet, because it is well digested and concocted; but if it hath a lit-

tle earthy matter mixed with it, that makes it somewhat salt.

Q. How is women's blood thicker than men's? A. Their coldness thickens, binds, congeals, and joins together.

Q. How comes the blood to all parts of the body through the liver, and by what means? A. Through the principal veins, as the veins of the head, liver, &c. to nourish all the body.

Of the Urine.

Q. How doth the urine come into the bladder, seeing the bladder is shut? A. Some say by sweatings; others, by a small skin in the bladder, which opens and lets in the urine. Urine is a certain and not deceitful messenger of the health and infirmity of man. Men make white urine in the morning, and before dinner red, but after dinner pale, and also after supper.

Q. Why is it hurtful to drink much cold water? A. Because one contrary doth hinder and expel another; water is very cold, and lying so in the stomach hinders digestion.

Q. Why is it unwholesome to drink new wine? A. 1. It cannot be digested; therefore it causes the belly to swell, and a kind of bloody flux. 2. It hinders making water.

Q. Why do physicians forbid us to labour

presently after dinner? A. 1. Because motion hinders the virtue and power of digestion. 2. Because stirring immediately after dinner causes the different parts of the body to draw the meat to them, which often breeds sickness. 3. Because motion makes the food descend before it is digested. But after supper it is good to walk a little, that the food may go to the bottom of the stomach.

Q. Why is it good to walk after dinner? A. Because it makes a man well disposed, and fortifies and strengthens the natural heat, causing the superfluity of the stomach to descend.

Q. Why is it wholesome to vomit? A. It purges the stomach of all naughty humours, expelling them, which would breed agues if they should remain in it; and purges the eyes and head, clearing the brain.

Q. How comes sleep to strengthen the stomach and digestive faculty? A. Because in sleep the heat draws inwards, and helps digestion; but when awake, the heat returns, and is dispersed through the body.

Of the Gall and Spleen.

Q. How come living creatures to have a gall? A. Because choleric humours are received into it, which through their acidity helps the guts to expel superfluities, also it helps digestion.

Q. How comes the jaundice to proceed from the gall? A. The humour of the guts is blueish and yellow; therefore when its pores are stopped, the humours cannot go into the sack thereof, but are mingled with the blood, wandering throughout all the body, and infecting the skin.

Q. Why hath a horse, mule, ass, or cow, no gall? A. Though those creatures have no gall in one place, as in a purse or vessel, yet they have one dispersed in small veins.

Q. How comes the spleen to be black? A. It is occasioned by terrestrial and earthly matter of a black colour. According to physicians, the spleen is the receptacle of melancholy, and that is black.

Q. Why is he lean who hath a large spleen? A. Because the spleen draws much water to itself, which would turn to fat; therefore, men that have a small spleen are fat.

Q. Why does the spleen cause men to laugh, as says Issidorus: "We laugh with the spleen, we are angry with the gall, we are wise with the heart, we love with the liver, we feel with the brain, and speak with the lungs?" A. The reason is, the spleen draws much melancholy to it, being its proper seat, the which melancholy proceeds from sadness, and is there consumed; and the cause failing, the effect doth so likewise. And by the same reason the gall

causes anger, for choleric men are often angry, because they have much gall.

Of Monsters.

Q. Doth nature make any monsters? A. She doth; if she did not, then would she be deprived of her end. For of things possible, she doth always propose to bring forth that which is most perfect and best; but in the end, through the evil disposition of the matter, not being able to bring forth that which she intended, she brings forth that which she can. As it happened in Albertus's time, when, in a certain village, a cow brought forth a calf, half a man; then the countrymen suspecting a shepherd, would have burnt him with the cow; but Albertus, being skilful in astronomy, said, that this did proceed from a special constellation, and so delivered the shepherd from their hands.

Q. Are they one or two? A. To find out, you must look into the heart; if there be two hearts, there be two men.

Of Infants.

Q. Why are some children like their father, some like their mother, some to both, and some to neither? A. If the seed of the father wholly

overcome that of the mother, the child doth resemble the father; but if the mother's predominate, then it is like the mother; but if he be like neither, that doth happen sometimes through the four qualities, sometimes through the influence of some heavenly constellation.

Q. Why are children oftener like the father than the mother? A. It proceeds from the imagination of the mother, as appeared in a queen who had her imagination on a blackamoor; and in an Ethiopian queen, who brought forth a white child, because her imagination was upon a white colour; as is seen in Jacob's skill in casting rods of divers colours into the water when his sheep went to ram.

Q. Why do children born in the eighth month for the most part die quickly; and why are they called the children of the moon? A. Because the moon is a cold planet, which has dominion over the child, and therefore doth bind it with its coldness, which is the cause of its death.

Q. Why doth a child cry as soon as it is born? A. Because of the sudden change from heat to cold; which cold doth affect its tenderness. Another reason is, because the child's soft and tender body is wringed and put together coming out of the narrow and strait passage of the matrix; and especially, the brain being moist, and the head being pressed and

wrinkled together, is the cause that some humours distil by the eyes, which are the cause of tears and weeping.

Q. Why doth the child put its fingers into its mouth as soon as it cometh into the world? A. Because that coming out of the womb it cometh out of a hot bath, and entering into the cold, puts its fingers into its mouth for want of heat.

Of the Child in the Womb.

Q. How is the child engendered in the womb? A. The first six days the seed hath the colour of milk; but in the six following a red colour, which is near unto the disposition of flesh; and then it is changed into a thick substance of blood. But in the twelve days following, this substance becomes so thick and round, that it is capable of receiving shape and form.

Q. Doth the child in the womb void excrements or make water? A. No; because it hath not the first digestion which is in the stomach. It receives no food by the mouth, but by the navel; therefore, makes no urine, but sweats, which is but little, and is received in a skin in the matrix, which at the birth is cast out.

Of Abortion and Untimely Birth.

Q. Why do women that eat unwholesome meats easily miscarry? A. Because they breed putrified seed, which, the mind abhorring, doth cast it out of the womb, as unfit for the most noble shape which is adapted to receive the soul.

Q. Why doth wrestling or leaping cause the casting of the child, as some subtle women do on purpose? A. The vapour is burning, and doth easily hurt the tender substance of the child, entering in at the pores of the matrix.

Q. Why doth much joy cause a woman to miscarry? A. Because in a time of joy a woman is destitute of heat, and so miscarriage doth follow.

Q. Why do women easily miscarry when they are first with child, viz. the first, second, or third month? A. As apples and pears easily fall at first, because the knots or ligaments are weak, so it is with a child in the womb.

Q. Why is it hard to miscarry in the third, fourth, fifth, or sixth months? A. Because the ligaments are stronger and well fortified.

Of Divers Matters.

Q. Why has not a man a tail like a beast? A. Because a man is a noble creature, whose property is to sit; which a beast, having a tail, cannot.

Q. Why does hot water freeze sooner than cold? A. Hot water is thinner, and gives better entrance to the frost.

Q. Why cannot drunken men judge of taste as well as sober men? A. Because the tongue, being full of pores and spungy, receives great moisture into it, and more in drunken men than in sober; therefore the tongue, through often drinking, is full of bad humours; and so the faculty of tasting is rendered out of order: also, through the thickening of the taste itself, drink taken by drunkards is not presently felt. And by this may be also understood why drunkards have not a perfect speech.

Q. Why have melancholy beasts long ears? A. The ears proceed from a cold and dry substance, called a gristle, which is apt to become bone; and because melancholy beasts do abound with this kind of substance, they have long ears.

Q. Why do hares sleep with their eyes open? A. 1. They have their eyes standing out, and

their eyelids short, therefore, never quite shut. 2. They are timorous, and, as a safeguard to themselves, sleep with their eyes open.

Q. Why do not crows feed their young till they be nine days old? A. Because seeing them of another colour, they think they are of another kind.

Q. Why are sheep and pigeons mild? A. They want galls, the cause of anger.

Q. Why have birds their stones inwards? A. Because, if outward they would hinder their flying and lightness.

Q. How comes it that birds do not make water? A. Because that superfluity which would be converted into urine, is turned into feathers.

Q. How do we hear better by night than by day? A. Because there is a greater quietness in the night than in the day, for the sun doth not exhale the vapours by night, but it doth in the day: therefore the mean is more fit than in the day; and the mean being fit, the motion is better received, which is said to be caused by a sound.

Q. For what reason doth a man laugh sooner when touched in the armpits than in the other parts of the body? A. Because there is in that place a meeting of many sinews, and the mean we touch, which is the flesh, is more subtle than in other parts, and therefore of finer feeling. When a man is moderately and gently

touched there, the spirits that are dispersed, run into the face, and cause laughter.

Q. Why do some women love white men and some black men? A. 1. Some have a weak sight, and such delight in black, because white doth hurt the sight more than black. 2. Because like delight in like; but some women are of a hot nature, and such are delighted with black, because blackness followeth heat; and others are of a cold nature, and those are delighted with white, because cold produces white.

Q. Why do men incline to sleep after labour? A. Because, through continual moving, the heat is dispersed to the external parts of the body, which, after labour, is gathered together to the internal parts, there to digest; and from digestion vapours arise from the heart to the brain, which stop the passage by which the natural heat should be dispersed to the external parts: and then, the external parts being cold and thick, by reason of the coldness of the brain, sleep is easily procured. By this it appeareth, that such as eat and drink too much, do sleep much and long, because there are great store of humours and vapours bred in such persons, which cannot be digested and consumed by the natural heat.

Q. Why are such as sleep much evil disposed and ill coloured? A. Because in too much

sleep moisture is gathered together which cannot be consumed, and so it doth covet to go out through the superficial parts of the body, and especially it resorts to the face, and therefore is the cause of bad colour, as appeareth in such as are phlegmatic, and who desire more sleep than others.

Q. Why do some imagine in their sleep that they eat and drink sweet things? A. Because the phlegm drawn up by the jaws doth distil and drop to the throat; and this phlegm is sweet after a sore sweat, and that seemeth so to them.

Q. Why do some dream in their sleep that they are in the water and drowned, and some that they are in the water and not drowned; especially such as are phlegmatic? A. Because when the phlegmatic substance doth turn to the high parts of the body, then they think they are in the water and drowned; but when that substance draweth into the internal parts, then they think they escape. Another reason may be, overmuch repletion and drunkenness; and therefore, when men are overmuch filled with meat, the fumes and vapours ascend and gather together, and they think they are drowned and strangled; but if they cannot ascend so high, then they seem to escape.

Q. May a man procure a dream, by an external cause? A. It may be done. If a man

speak softly at another's ear and awake him not, then of this stirring of the spirits there are thunderings and buzzings in the head, which cause dreaming.

Q. How many humours are there in a man's body? A. Four; whereof every one hath its proper place. The first is choler, called by physicians *stava bilis*, which is placed in the liver. The second is melancholy, called *atra bilis*, whose seat is in the spleen. The third is phlegm, whose place is in the head. The fourth is blood, whose place is in the heart.

Q. What condition and quality hath a man of a sanguine complexion? A. He is fair and beautiful; hath his hair for the most part smooth; is bold; retaineth that which he hath conceived; is shame-faced, given to music, a lover of sciences, liberal, courteous, and not desirous of revenge.

Q. What properties do follow those of a phlegmatic complexion? A. They are dull of wit, their hair never curls, they are seldom very thirsty, much given to sleep, dream of things belonging to water, are fearful, covetous, given to heap up riches, and are weak in the act of venery.

Q. What are the properties of a choleric man? A. He is soon angry, furious, and quarrelsome, given to war, pale coloured, and un-

quiet, drinks much, sleeps little, and desires women's company much.

Q. What are the properties of a melancholy man? A. He is brown in complexion, unquiet, his veins hidden, eateth little, and digesteth less, dreameth of dark and confused things, is sad, fearful, exceeding covetous, and incontinent.

Q. What dreams do follow these complexions? A. Pleasant merry dreams do follow the sanguine; fearful dreams the melancholic; the choleric dream of children, fighting, and fire; the phlegmatic dream of water. This is the reason why a man's complexion is said to be known by his dreams.

Q. What is the reason that if you cover an egg over with salt, and let it lie in it a few days, all the meat within is consumed? A. The great dryness of the salt consumes the substance of the egg.

Q. Why is the melancholic complexion the worst? A. Because it proceeds from the dregs of blood, is an enemy to mirth, and bringeth on an aged appearance and death, being cold and dry.

Q. What is the cause that some men die joyful, and some in extreme grief? A. Over great joy doth overmuch heat the internal parts of the body; and overmuch grief doth drown

and suffocate the heart, which failing, a man dieth.

Q. Why hath a man so much hair on his head? A. The hair of the head proceeds from the vapours which arise from the stomach, and ascend to the head, and also from the superfluities which are in the brain; and those two passing through the pores of the head are converted into hair, by reason of the heat and dryness of the head. And because man's body is full of humours, and he hath more brains than any other creature, and also more superfluities in the brains, which the heat expelleth: hence it followeth that he hath more hair than any other living creature.

Q. How many ways is the brain purged, and other hidden places of the body? A. Four; the watery and gross humours are purged by the eyes, melancholy by the ears, choler by the nose, and phlegm by the hair.

Q. What is the reason that such as are very fat in their youth are in danger of dying on a sudden? A. Such have very small and close veins, by reason of their fatness, so that the air and the breath can hardly have free course in them; and thereupon the natural heat, wanting the refreshment of air, is put out, and as it were, quenched.

Q. Why do garlic and onions grow after they

are gathered? A. It proceedeth from the humidity that is in them.

Q. Why do men feel cool sooner than women? A. Because men, being more hot than women, have their pores more open, and therefore it doth sooner enter into them than women.

Q. Why are not old men subject to the plague as young men and children? A. They are cold and their pores not so open as in youth: and therefore the infecting air doth not penetrate so soon by reason of their coldness.

Q. Why do we cast water in a man's face when he swooneth? A. Because that through the coldness of water the heat may run to the heart, and so give strength.

Q. Why are those waters best and most delicate which run towards the rising sun? A. Because they are soonest stricken with the sunbeams, and made pure and subtle, the sun having them under it, and by that means taking off the coldness and gross vapours which they gather from the ground they run through.

Q. Why have women such weak and small voices? A. Because their instruments and organs of speaking, by reason of their coldness, are small and narrow; and therefore, receiving but little air, cause the voice to be effeminate.

Q. Wherefore doth it proceed that want of

sleep doth weaken the brain and the body? A. Much watching doth engender choler, the which being hot doth dry up and lessen the humours which serve the brain, the head, and other parts of the body.

Q. Wherefore doth vinegar so readily staunch the blood? A. From its cold virtue; for all cold is naturally binding, and vinegar being cold, hath the like property.

Q. Why is sea-water salter in summer than in winter? A. From the heat of the sun, seeing by experience that a salt thing being heated becometh more salt.

Q. Why do men live longer in hot regions than in cold? A. Because they may be more dry, and by that means the natural heat is better preserved in them than in cold countries.

Q. Why is well-water seldom or ever good? A. All water which standeth still in the spring, and is never heated by the sun-beams, is very heavy, and hath much earthy matter in it; and therefore, wanting the heat of the sun, is naught.

Q. Why do men sleep better and more at ease on the right side than on the left? A. Because when they lie on the left side, the lungs do lie upon and cover the heart, which is on that side under the pap; now the heart, the fountain of life, being thus occupied and hindered with the lungs, cannot exercise its own proper operation,

as being overmuch heated with the lungs lying upon it, and therefore wanting the refreshment of the air which the lungs do give it, like the blowing of a pair of bellows, is choked and suffocated; but by lying on the right side, these inconveniences are avoided.

Q. What is the reason that old men sneeze with great difficulty? A. Because that through their coldness their arteries are very narrow and close, and therefore the heat is not of force to expel the cold.

Q. Why doth a drunken man think that all things about him do turn round? A. Because the spirits which serve the sight are mingled with vapours and fumes, arising from the liquors he has drank: the overmuch heat causeth the eye to be in continual motion; and the eye being round causeth all things about it to seem to go round.

Q. Wherefore doth it proceed, that bread which is made with salt, is lighter than that which is made without it, considering salt is very heavy of itself? A. Although bread is heavy of itself, yet the salt dries it, and makes it light, by reason of the heat which it hath; and the more heat there is in it, the better the bread is, and the lighter and more wholesome for the body.

Q. Why is not new bread good for the stomach? A. Because it is full of moistness, and

thick hot vapours, which do corrupt the blood; and hot bread is blacker than cold, because heat is the mother of blackness, and because the vapours are not gone out of it.

Q. Why do lettuces make a man sleep? A. Because they engender gross vapours.

Q. Why do the dregs of wine and oil go to the bottom, and those of honey swim uppermost? A. Because the dregs of wine and oil are earthy, and therefore go to the bottom; but honey is a liquid that cometh from the stomach and belly of the bee, and is there in some sort purified and made subtle; on which account the dregs are most light and hot, and therefore go uppermost.

Q. Why do cats' and wolves' eyes shine in the night, and not in the day? A. The eyes of these beasts are by nature more crystalline than the eyes of other beasts, and therefore do shine in darkness; but the brightness of the sun doth hinder them from being seen in the day-time.

Q. What is the reason that some men, when they see others dance, do the like with their hands and feet, or by other gestures of the body? A. Because the sight having carried and represented unto the mind that action, and judging the same to be pleasant and delightful, therefore the imagination draweth the like of it in conceit, and stirs up the body by the gestures.

Q. Why does much sleep cause some to grow fat and some lean? A. Those who are of ill complexion, when they sleep, do consume and digest the superfluities of what they have eaten, and therefore become fat. But such as are of good complexion, when they sleep, are more cold and digest less.

Q. How and from what cause do we suffer hunger better than thirst? A. When the stomach has nothing else to consume, it consumeth the phlegm and humours which it findeth most ready and most at hand; and therefore we suffer hunger better than thirst, because the heat hath nothing to refresh itself with.

Q. Why doth the hair fall after a great sickness? A. Where the sickness is long, as in an ague, the humours of the head are dried up through over much heat, and, therefore, wanting nourishment, the hair falls.

Q. Why doth the hair of the eyebrows grow long in old men? A. Because through their age the bones of the eye-lids are thin for want of heat, and therefore the hair doth grow there, by reason of the rheum of the eyes.

Q. Whereof proceedeth gaping? A. Of gross vapours, which occupy the vital spirits of the head, and of the coldness of the senses, causing sleepiness.

Q. What is the reason that some flowers do open with the sun rising, and shut with the

setting? A. Cold doth close and shut, as hath been said, but the heat of the sun doth open and enlarge. Some compare the sun to the soul of the body; for as the soul giveth life, so the sun doth give life, and vivicate all things; but cold bringeth death, withering and decaying all things.

Q. Why doth grief cause men to grow old and gray? A. Age is nothing else but dryness and want of humours of the body; grief then causeth alteration, and heat dryness; age and grayness follow immediately.

Q. Why are gelded beasts weaker than such as are not gelded? A. Because they have less heat, and by that means less force and strength.

THE PROBLEMS

OF

MARCUS ANTONIUS ZIMARAS SANCTIPERTIAS.

Q. Why is it esteemed, in the judgment of the most wise, the hardest thing to know a man's self? A. Because nothing can be known

that is of so great importance to man, for the regulation of his conduct in life. Without this knowledge, man is like the ship which has neither compass nor rudder to conduct her to port, and is tossed by every passion and prejudice to which his natural constitution is subjected. To know the form and perfection of man's self, according to the philosophers, is a task too hard; and a man, says Plato, is nothing, or if he be any thing, he is nothing but his soul.

Q. Why is a man, though endowed with reason, the most unjust of all living creatures? A. Because only man is desirous of honour; and so it happens that every one covets to seem good, and yet naturally shuns labour, though he attain no virtue by it.

Q. Why is man the proudest of all living creatures? A. By reason of his great knowledge; or as philosophers say, all intelligent beings have understanding, nothing remains that escapes man's knowledge in particular; or it is because he hath rule over all earthly creatures, and all things seem to be brought under his dominion.

Q. Why have beasts their hearts in the middle of their breasts, and man his inclining to the left side? A. To moderate the cold on that side.

Q. How come hairy people to be more lust-

ful than any others? A. Because they are sup posed to have great store of excrements an seed, as philosophers assert.

Q. What is the cause that the suffocation o the matrix, which happens to women throug strife and contention, is more dangerous tha the detaining of the flowers? A. Because th more perfect an excrement is, in its natural dis-position, the worse it is when it is altered from that disposition, and drawn to the contrary quality; as is seen in vinegar, which is sharp-est when it is made of the best wine. And so it happens that the more men love one ano-ther, the more they fall into variance and dis-cord

Q. How come women's bodies to be looser, softer, and less than men's; and why do they want hair? A. By reason of their menses; for with them their superfluities go away, which would produce hair; and thereby the flesh is filled, consequently the veins are more hid in women than in men.

Q. What is the reason that when we think upon a horrible thing, we are stricken with fear? A. Because the conceit or imagination of things has force and virtue. For Plato saith, the fancy of things has some affinity with the things themselves; for the image and repre-sentation of cold and heat is such as the nature of things are. Or it is, because when we com-

prehend any dreadful matter, the blood runneth to the internal parts; and therefore the external parts are cold, and shake with fear.

Q. Why doth a radish root help digestion, and yet itself remaineth undigested? A. Because the substance consisteth of divers parts; for there are some thin parts in it, which are fit to digest meat, the which being dissolved, there doth remain some thick and close substance in it, which the heat cannot digest.

Q. Why do such as cleave wood cleave it easier in the length than athwart? A. Because in the wood there is a grain, whereby, if it be cut in length, in the very cutting, one part naturally separateth from another.

Q. What is the reason, that if a spear be stricken on the end, the sound cometh sooner to one which standeth near, than to him who striketh? A. Because, as hath been said, there is a certain long grain in wood, directly forward filled with air, but on the other side there is none, and therefore a beam or spear being stricken on the end, the air which is hidden receiveth a sound in the aforesaid grain, which serveth for its passage; and, seeing the sound cannot go easily out, it is carried unto the ear of him who is opposite; as those passages do not go from side to side, a sound cannot be distinctly heard there.

Q. Why are the thighs and calves of the legs

of men fleshy, seeing the legs of beasts are n
so? A. Because men only go upright; ar
therefore nature hath given the lower parts co
pulency, and taken it away from the upper; an
thus she hath made the buttocks, the thigh
and calves of the legs fleshy.

Q. Why are the sensible powers in the heart
yet, if the hinder part of the brain be hurt, th
memory suffereth by it; if the fore part, th
imagination; if the middle, the cogitative part
A. It is because the brain is appointed by Na
ture to cool the heat of the heart; whereof i
is, that in divers parts it serveth the powers an
instruments with their heat, for every action o
the soul doth not proceed from one measure o
heat.

THE PROBLEMS

OF

ALEXANDER APHRODISEUS.

Q. Why doth the sun make a man black, and
dirt white, wax soft, and dirt hard? A. By
reason of the disposition of the substance that
doth suffer. All humours, phlegm excepted,

when heated above measure, do seem black about the skin; and dirt, being full either of saltpetre, or salt liquor, when the sun hath consumed its dregs and filth, doth become white again; when the sun hath drawn and stirred up the humidity of wax, it is softened; but in dirt the sun doth consume the humidity, which is very much, and makes it hard.

Q. Why are round ulcers hard to be cured? A. Because they are bred of a sharp choler, which eats and gnaws; and because it doth run, dropping and gnawing, it makes a round ulcer; for which reason it requires drying medicines, as physicians assert.

Q. Why is honey sweet to all men but such as have the jaundice? A. Because they have much bitter choler all over their bodies, which abounds in the tongue; whence it happens, when they eat honey the humours are stirred, and the taste itself, by the bitterness of choler, causes an imagination that the honey is bitter.

Q. Why doth water cast on serpents cause them to fly? A. Because they are dry and cold by nature, having but little blood, and therefore fly from excessive coldness.

Q. Why doth an egg break if it be roasted and not if boiled? A. When moisture comes near the fire, it is heated very much, and so breeds wind, which being put up in little room, forces its way out, and breaks the shell: the

like happens in tubs, or earthen vessels, when new wine is put into them: too much phlegm breaks the shell of an egg in roasting; it is the same with earthen pots too much heated; wherefore some people wet an egg when they intend to roast it. Hot water, by its softness, doth dissipate its humidity by little and little, and dissolves it through the thinness and passages of the shell.

Q. Why have children gravel breeding in their bladders, and old men in their kidneys and reins? A. Because children have strait passages in their kidneys, and an earthy thick humour is thrust with violence by the urine to the bladder, which hath wide conduits or passages, that give room for the urine and humour whereof gravel is engendered, which waxes thick, and seats itself, as the manner of it is. In old men it is the reverse, for they have wide passages of the veins, back, and kidneys, that the urine may pass away, and the earthy humour congeal and sink down; the colour of the gravel shows the humour whereof the stone comes.

Q. Why is it, if the stone do congeal and wax hard through heat, we use not contrary things to dissolve it by coldness, but light things, as parsley, fennel, and the like? A. It is thought to fall out by an excessive scorching heat, by which the stones do crumble into sand, as in

the manner of earthen vessels, which, when they are over-heated or roasted, turn to sand. And by this means it happens that small stones are voided, together with sand, in making water. Sometimes cold drink thrusts out the stone, the kidneys being stretched, and casting it out by a great effort, thus easing the belly of its burden. Besides, it often happens that immoderate heat of the kidneys, or reins of the back (through which the stone doth grow) is quenched with coldness.

Q. Why is the curing of an ulcer or bile in the kidney or bladder very hard? A. Because the urine, being sharp, doth ulcerate the sore. Ulcers are worse to cure in the bladder than in the kidneys, because the urine stays in the former, but runs away from the latter.

Q. Why do chaff and straw keep water hot, but make snow cold? A. Because the nature of chaff wants a manifest quality; seeing, therefore, that of its own nature it can be easily mingled, and consumed by that which it is annexed unto, it easily assumes the same nature, and being put into hot things, it is easily hot, heats again, and keeps hot; and, on the contrary, being made cold by the snow, and making the snow cold, it keeps it in its coldness.

Q. Why have we oftentime a pain in making water? A. Because sharp choler issuing out, and pricking the bladder of the urine, doth pro-

voke and stir up the whole body to ease the part offended, and to expel the humour moderately. This doth happen most of all unto children, because they have moist excrements, by reason of their often filling.

Q. Why have some medicines of one kind contrary effects, as experience proves; for mastich doth expel, dissolve, and also knit; and vinegar cools and heats? A. Because there are some invisible bodies in them, not by confusion, but by interposition; as sand moistened doth clog together and seem to be but one body, though indeed there are many small bodies in sand. And since this is so, it is not absurd that contrary qualities and virtues should be hidden in mastich, and that nature hath given that virtue to these bodies.

Q. Why do nurses rock and move their children when they would draw them to sleep? A. To the end that the humours being scattered by moving, may move the brains; but those of more years cannot endure this.

Q. Why doth oil, being drank, cause one to vomit, and especially yellow choler? A. Because, being light, and ascending upwards, it provoketh the nutriment in the stomach, and lifteth it up, and so the stomach being grieved, summoneth the ejective virtue to vomit, and especially choler, because that is light, and consisteth of subtle parts, and therefore the sooner

carried upward; for when it is mingled with any moist thing, it runneth into the highest room.

Q. Why doth not oil mingle with moist things? A. Because, being pliant, soft, and thick in itself, it cannot be divided into parts, and so cannot be mingled; neither if it be put on earth can it enter into it.

Q. Why are water and oil frozen in cold weather, and wine and vinegar are not? A. Because that oil, being without quality, and fit to be compounded with any thing, is cold quickly, and so extremely, that it is most cold. Water, being cold of nature, doth easily freeze when it is made colder than its own nature. Wine being hot, and of subtle parts, suffereth no freezing.

Q. Why do contrary things in quality bring forth the same effect? A. That which is moist is hardened and bound alike by heat and cold. Snow and liquid do freeze with cold; a plaster, and gravel in the bladder, are made dry with heat. The effect indeed is the same, but by two divers actions; the heat doth consume and eat the abundance of moisture; but the cold stopping and shutting with its overmuch thickness, doth wring out the filthy humidity, like as a spunge wrung with the hand doth cast out the water which it hath in the pores or small passages.

Q. Why doth a shaking or quivering seize u oftentimes when any fearful matter doth hap pen, as a great noise or crack made, the sudden downfall of water, or the fall of a large tree? A. Because that oftentimes the humours being digested and consumed by time, and made thin and weak, all the heat, vehemently, suddenly, and sharply flying into the inward part of the body, consumeth the humours which cause the disease. So treacle hath this effect, and many such like, which are hot and dry, when taken after connexion.

Q. Why do steel glasses shine so clearly? A. Because they are lined in the inside with white lead, whose nature is shining, and being put to glass, which is lucid and transparent, doth shine much more; and casts its beams through its passages, and without the body of the glass; and by that means the glass is very shining and clear.

Q. Why do we see ourselves in glasses and clear water? A. Because the quality of the sight, passing into the bright bodies by reflection, doth return again on the beam of the eyes, as the image of him who looketh on it..

Q. What is the reason, that if you cast a stone into standing water which is near the surface of the earth it causes many circles, and not if the water be deep in the earth? A. Because that the stone, with the vehemence of the

cast, doth agitate the water in every part of it, until it come to the bottom; and if there be a very great vehemence in the throw, the circle is still greater, the stone going down to the bottom causing many circles. For, first of all, it doth divide the outermost and superficial parts of the water in many parts, and so always going down to the bottom, again dividing the water, it maketh another circle, and this is done successively until the stone resteth; and because the vehemence of the stone is slackened still as it goes down, of necessity the last circle is less than the first, because by that and also by its force the water is divided.

Q. Why are such as are deaf by nature dumb? A. Because they cannot speak and express that which they never heard. Some physicians do say, that there is one knitting and uniting of sinews belonging to the like disposition. But such as are dumb by accident are not deaf at all, for then there ariseth a local passion.

Q. Why doth itching arise when an ulcer doth wax whole and phlegm cease? A. Because the part which is healed and made sound doth pursue the relic of the humours which remained there against nature, and which was the cause of the bile, and so going out through the skin, and dissolving itself, doth originally cause the itch.

Q. How comes a man to sneeze oftener and more vehemently than a beast? A. Because he uses more meats and drinks, and of more different sorts, and that more than requisite; the which, when he cannot digest as he would, he doth gather together much air and spirit, by reason of much humidity; the spirits then very subtle, ascending into the head, often force a man to void them, and so provoke sneezing. The noise caused thereby proceeds from a vehement spirit or breath passing through the conduits of the nostrils, as belching doth the stomach, or breaking wind by the fundament, the voice by the throat, and a sound by the ear.

Q. How come the hair and nails of dead people to grow? A. Because the flesh rotting, withering, and falling away, that which was hidden about the root of the hair doth now appear as growing. Some say that it grows indeed, because carcases are dissolved in the beginning to many excrements and superfluities by putrefaction. These going out at the uppermost parts of the body by some passages, do increase the growth of the hair.

Q. Why does not the hair of the feet soon grow gray? A. For this reason, because that through great motion they disperse and dissolve the superfluous phlegm that breeds grayness.

Q. Why, if you put hot burnt barley upon a

horse's sore, is the hair which grows upon the sore not white but like the other hair? A. Because it hath the force of expelling, and doth drive away and dissolve the phlegm, as well as all other unprofitable matter that is gathered together through the weakness of the parts, or crudity of the sore.

Q. Why doth hair never grow on an ulcer or bile? A. Because man hath a thick skin, as is seen by the thickness of his hair; and if the scar be thicker than the skin itself, it stops the passages from whence the hair should grow. Horses have thinner skins, as is plain by their thick hair; therefore all passages are not stopped in their wounds and sores; and after the excrements which were gathered together have broken a passage through those small pores, the hair doth grow.

Q. Why is Fortune painted with a double forehead, the one side bald and the other hairy? A. The baldness signifies adversity; and hairiness prosperity, which we enjoy when it pleaseth her.

Q. Why have some commended flattery? A. Because flattery setteth forth before our eyes what we ought to be, though not what we are.

Q. Wherefore should virtue be painted girded? A. To show that virtuous men should not be slothful, but diligent, and always in action.

Q. Why did the ancients say it was better fall into the hands of a raven than a flatterer A. Because ravens do not eat us till we be dea but flatterers devour us alive.

Q. Why have choleric men beards befor others? A. Because they are hot, and thei pores large.

Q. How comes it that such as have the hic cup do ease themselves by holding their breath A. The breath retained doth heat the interio parts of the body, and the hiccup proceeds from cold.

Q. How comes it that old men remember well what they have seen and done in their youth, and forget such things as they see and do in their old age? A. Things learned in youth take deep root and habitude in a person, but those learned in age are forgotten, because the senses are then weakened.

Q. What kind of covetousness is best? A. That of time, when employed as it ought to be.

Q. Why is our life compared to a play? A. Because the dishonest do occupy the place of the honest, and the worst sort the room of the good.

Q. Why do dolphins, when they appear above the water, denote a storm or tempest approaching? A. Because at the beginning of a tempest there do arise from the bottom of the sea certain hot exhalations and vapours which

heat the dolphins, causing them to rise up for cold air.

Q. Why did the Romans call Fabius Maximus the target of the people, and Marcellus the sword? A. Because the one adapted himself to the service of the commonwealth, and the other was very eager to revenge the injuries of his country; and yet they were in the senate joined together, because the gravity of the one would moderate the courage and boldness of the other.

Q. Why doth the shining of the moon hurt the head? A. Because it moves the humours of the brain, and cannot afterwards dissolve them.

Q. If water do not nourish, why do men drink it? A. Because water causes the nutriment to spread through the body.

Q. Why is sneezing good? A. Because it purgeth the brain, as milk is purged by the cough.

Q. Why is hot water lighter than cold? A. Because boiling water has less ventosity, and is more light and subtle, the earthy and heavy substance being separated from it.

Q. How comes marsh and pond water to be bad? A. By reason they are phlegmatic, and do corrupt in summer; the fineness of the water is turned into vapours, and the earthiness doth remain.

Q. Why are studious and learned men soon est bald? A. It proceeds from a weakness o the spirits, or because warmth of digestion causes phlegm to abound in them.

Q. Why doth much watching make the brain feeble? A. Because it increases choler, which dries and extenuates the body.

Q. Why are boys apt to change their voices about fourteen years of age? A. Because that then nature doth cause a great and sudden change of voice, experience proves this to be true; for at that time we may see that women's paps do grow great, do hold and gather milk, and also those places that are above their hips, in which the young fruit would remain. Likewise men's breasts and shoulders, which then can bear great and heavy burdens; also their stones in which their seed may increase and abide, and in their privy members, to let out seed with ease. Further, all the body is made bigger and dilated, as the alteration and change of every part doth testify, and the harshness of the voice and hoarseness; for the rough artery, the wind-pipe, being made wide in the beginning, and the exterior and outward part within being unequal to the throat, the air going out the rough uneven pipe doth then become unequal and sharp, and after hoarse, something like unto the voice of a goat, wherefore it has its name called Bronchus. The same doth also

happen to them unto whose rough artery distillation doth flow; it happens by reason of the drooping humidity that a light small skin filled unequally causes the uneven going forth of the spirit and air. Understand, that the wind-pipe of goats is such by reason of the abundance of humidity. The like doth happen unto all such as nature hath given a rough artery, as unto cranes. After the age of fourteen they leave off that voice, because the artery is made wider and reacheth its natural evenness and quality.

Q. Why do hard dens, hollow and high places, send back the likeness and sound of the voice? A. Because that in such places also by reflection do return back the image of a sound, for the voice doth beat the air, and the air the place, which the more it is beaten the more it doth bear, and therefore doth cause the more vehement sound of the voice; moist places, and as it were soft, yielding to the stroke, and dissolving it, give no sound again; for according to the quantity of the stroke, the quality and quantity of the voice is given, which is called an echo. Some do idly fable that she is a goddess: some say that Pan was in love with her, which without doubt is false. He was some wise man, who did first desire to search out the cause of that voice; and as they who love, and cannot enjoy that love, are grieved, so in like manner was he very sorry until he found out

the solution of that cause: as Endymion a
who first found out the course of the mo
watching all night, and observing her cou
and searching her motion, did sleep in the d
time, and therefore they do fable that he
beloved of her, and that she came to him wh
he was asleep, because she did give the philo
pher the solution of the course of herself. Th
say also that he was a shepherd, because that
the desert and high places he did mark t
course of the moon. And they gave him also t
pipe, because that the high places are blown wi
wind, or else because he sought out the cons
nancy of figures. Prometheus, also, being
wise man, sought the course of the star, whic
is called the eagle in the firmament, his nature ar
place; and when he was as it were wasted wit
the desire of learning, then at last he restec
when Hercules did resolve unto him all doub
with his wisdom.

Q. Why do not swine cry when they are ca
ried with their snouts upwards? A. Becaus
that above all other beasts they bend more t
the earth. They delight in filth, and that the
seek, and therefore in the sudden change o
their face, they be as it were strangers, and be
ing amazed with so much light do keep that si
lence; some say the wind-pipe doth close toge-
ther by reason of the straitness of it.

Q. Why do swine delight in dirt? A. A

the physicians do say, they are naturally delighted with it, because they have a great liver, in which desire is, as Aristotle saith; the wideness of the snout is the cause, for he hath smelling which doth dissolve itself, and as it were strive with stench.

Q. Why do many beasts wag their tails when they see their friends, and a lion and a bull beat their sides when they are angry? A. Because they have the marrow of their backs reaching to the tail, which hath the force of motion in it, the imagination acknowledging that which is known to them as it were with the hand, as happens to men, doth force them to move their tails. This doth manifestly show some secret force to be within them, which doth acknowledge what they ought. In the anger of lions and bulls nature doth consent to the mind, and causeth it to be gently moved, as men do sometimes when they are angry, beating their hands on other parts; when the mind cannot be revenged on that which doth hurt, it presently seeks out some other source, and cures the malady with a stroke or blow.

Q. How come steel glasses to be better for the sight than any other kind? A. Because steel is hard, and doth present unto us more substantially the air that receiveth the light.

Q. How doth love show its greater force; by making the fool to become wise, or the wise to

become a fool? A. In attributing wisdom to him that has it not; for it is harder to build than to pull down; and ordinarily love and folly are but an alteration of the mind.

Q. How comes much labour and fatigue to be bad for the sight? A. Because it dries the blood too much.

Q. Why is goat's milk reckoned best for the stomach? A. Because it is thick, not slimy; and they feed on wood and boughs rather than grass.

Q. Why do grief and vexation bring gray hairs? A. Because they dry, which bringeth on grayness.

Q. How come those to be most merry who have the thickest blood? A. Because the blood which is fat and thick makes the spirits firm and constant, wherein consists the force of all creatures.

Q. Whether is it hardest to obtain a person's love, or to keep it when obtained? A. It is hardest to keep it, by reason of the inconstancy of man, who is quickly angry, and soon weary of a thing; hard to be gained, and slippery to keep.

Q. Why do serpents shun the herb rue? A. Because they are very cold, dry, and full of sinews, and that herb is of a contrary nature.

Q. Why is a capon better to eat than a cock?

A. Because a capon loses not his moisture by treading the hens.

Q. Why is our smell less in winter than summer? A. Because the air is thick, and less moveable.

Q. Why does hair burn so quickly? A. Because it is dry and cold.

Q. Why is love compared to a labyrinth? A. Because the entry and coming in is easy, and the going out impossible, or very hard.

DISPLAYING THE SECRETS OF NATURE,

RELATING TO

PHYSIOGNOMY.

CHAPTER I.

SECT. I. *Of Physiognomy, showing what it is, and from whence it is derived.*

PHYSIOGNOMY is an ingenious science, or knowledge of nature, by which the inclinations and dispositions of every creature are understood, and because some of the members are uncom-

pounded and entire of themselves, as th tongue, the heart, &c. and some are of a mixe nature, as the eyes, the nose, and others we therefore say that there are signs which agree and live together, which inform a wis man how to make his judgment before he be too rash to deliver it to the world.

Nor is to be esteemed a foolish or idle art, seeing it is derived from superior bodies; for there is no part of the face of man but what is under the peculiar influence or government not only of the seven planets, but also of the twelve signs of the Zodiac, and the dispositions, vices, virtues, and fatality, either of a man or woman, are plainly foretold, if the person pretending to the knowledge thereof be an artist, which, that my reader may hereby attain to, I shall set these things in a clearer light.

The reader should remember that the forehead is governed by Mars; the right eye is under the dominion of Sol; the left is ruled by the Moon; the right ear is under Jupiter; the left Saturn; the rule of the nose is claimed by Venus; and nimble Mercury, the significator of eloquence, claims the dominion of the mouth, and that very justly.



Thus have the seven planets divided the face among them, but not with so absolute a sway, but that the twelve signs of the Zodiac do also come in with a part, (See the engraving) : And therefore the sign Cancer presides in the upper part of the forehead, and Leo attends upon the right eye-brow, as Sagittarius does upon the right eye, and Libra upon the right ear: upon the left eye-brow you will find Aquarius: and Gemini and Aries taking care of the left ear: Taurus rules in the middle of the forehead, and Capricorn the chin: Scorpio takes upon him the protection of the nose: Virgo claims the precedence of the right cheek, Pisces the left. And thus the face of man is cantoned out

amongst the signs and planets; which being carefully attended to, will sufficiently inform the artist how to pass a judgment. For according to the sign or planet ruling, so also is the judgment to be of the part ruled, which all those that have understanding know easily how to apply.

In the judgment that is to be made from physiognomy, there is a great difference betwixt a man and a woman; the reason is, because in respect of the whole composition, men more fully comprehend it than women do, as may evidently appear in the manner and method we shall give. Wherefore the judgments which we shall pass in every chapter, do properly concern a man, as comprehending the whole species, and but improperly the woman, as being but a part thereof, and derived from the man; and therefore whoever is called to give judgment on such and such a face, ought to be wary about all the lines and marks that belong to it, respect being also had to the sex: for when we behold a man whose face is like unto a woman's, and we pass a judgment upon it, having diligently observed it, and not on the face only but on the other parts of the body, as his hands, &c. in like manner we also behold the face of a woman, who in respect of her flesh and blood is like unto a man, and in the disposure also of the greatest parts of the body.

But does physiognomy give the same judgment on her, as it does of a man that is like unto her? By no means, but far otherwise; in regard that the conception of the woman is much different from that of a man, even in those respects which are said to be common. Now in those common respects two parts are attributed to a man, a third part to a woman.

Wherefore it being our intention to give you an exact account, according to the rule of physiognomy, of all and every part of the members of the body, we will begin with the head, as it hath relation only to man and woman, and not to any other creature, that the work may be more obvious to every reader.

CHAP. II.

Of the Judgment of Physiognomy.

Hair that hangs down without curling, if it be of a fair complexion, thin and soft withal, signifies a man to be naturally faint-hearted, and of a weak body, but of a quiet and harmless disposition. Hair that is big, and thick, and short withal, denotes a man to be of a strong constitution, secure, bold, deceitful, and for the most part, unquiet and vain, lusting after beau-

ty, and more foolish than wise, though fort
may favour him. He whose hair is partly c
ed and partly hanging down, is commonly w
or a very great fool, or else as very a knave
he is a fool. He whose hair grows thick on
temples and his brow, one may at the first si
certainly conclude that such a man is by nat
simple, vain, luxurious, lustful, credulo
clownish in his speech and conversation, a
dull in his apprehension. He whose hair n
only curls very much, but bushes out, a
stands on end, if the hair be white, or of a y
lowish colour, he is by nature proud and bo
dull of apprehension, soon angry, given to lyin
malicious, and ready to do any mischief. I
whose hair rises in the corner of his templ
and is gross and rough withal, is a man high
conceited of himself, inclined to malice, b
cunningly conceals it, is very courtly, and
lover of new fashions. He who hath muc
hair, that is to say, whose hair is thick all ov
his head, is naturally vain and very luxuriou
of a good digestion, easy of belief, and slo
of performance, of a weak memory, and for th
most part unfortunate. He whose hair is of
reddish complexion, is for the most part, if no
always, proud, deceitful, detracting, and fu
of envy. He whose hair is extraordinary fai
is for the most part a man fit for all praise
worthy enterprises, a lover of honours, an

much more inclined to do good than evil; laborious and careful to perform whatsoever is committed to his care, secret in carrying on any business, and fortunate. Hair of a yellowish colour shows a man to be good-conditioned, and willing to do any thing, fearful, shamefaced, and weak of body, but strong in the abilities of the mind, and more apt to remember than to revenge an injury. He whose hair is of a brownish colour, and curled not too much nor too little, is a well-disposed man, inclined to that which is good, a lover of peace, cleanliness, and good manners. He whose hair turns gray or hoary in the time of his youth, is generally given to women, vain, false, unstable, and talkative. Note. That whatever signification the hair has in men, it has the same in women also.

The forehead that riseth in a round, signifies a man liberally merry, of a good understanding, and generally inclined to virtue. He whose forehead is fleshy, and the bone of the brow jutting out, and without wrinkles, is a man much inclined to suits of law, contentious, vain, deceitful, and addicted to follow ill courses. He whose forehead is very low and little, is of a good understanding, magnanimous, but extremely bold and confident, and a great pretender to love and honour. He whose forehead seems sharp, and pointed up in the corn-

ers of his temples, so that the bone seem
jut forth a little, is a man naturally weak
fickle, and weak in the intellectuals. He wh
brow upon the temples is full of flesh, is a m
of a great spirit, proud, watchful, and o
gross understanding. He whose brow is full
wrinkles, and has as it were a seam com
down the middle of the forehead, so that a m
may think he hath two foreheads, is one that
of a great spirit, a great wit, void of deceit, a
yet of a hard fortune. He who has a full lar
forehead, and a little round withal, destitute
hair, or at least that has little on it, is bol
malicious, high-spirited, full of choler, and a
to trangress beyond all bounds, and yet of
good wit, and very apprehensive. He who
forehead is long and high, and jutting fort
and whose face is figured, almost sharp a
picked towards the chin, is one reasonab
honest, but weak and simple, and of a ha
fortune.

Those eye-brows that are much arched, wh
ther in man or woman, and which by freque
motion elevate themselves, show the person
be proud, high-spirited, vain-glorious, bold an
threatening, a lover of beauty, and indifferen
ly inclined to either good or evil. He whos
eye-lids bend downwards when he speaks t
another, or when he looks upon him, and wh
has a kind of skulking look, is by nature a pe

urious wretch, close in all his actions, of a very few words, but full of malice in his heart. He whose eye-brows are thick, and have but little hair upon them, is but weak in his intellectuals, and too credulous, very sincere, sociable, and desirous of good company. He whose eye-brows are folded, and the hair thick, and bending downwards, is one that is clownish and unlearned, heavy, suspicious, miserable, envious, and one that will cheat and cozen you if he can, and is only to be kept honest by good looking to. He whose eye-brows have but short hair and of a whitish colour, is fearful, and very easy of belief, and apt to undertake any thing. Those on the other side whose eye-brows are black, and the hair of them but thin, will do nothing without great consideration, and are bold and confident of the performance of what they undertake: neither are they apt to believe any thing without reason for so doing.

If the space between the eye-brows be of more than ordinary distance, it shows the person to be hard-hearted, envious, close, cunning, apprehensive, greedy of novelties, of a vain fortune, addicted to cruelty more than love. But those men whose eye-brows are at lesser distance from each other, are for the most part of a dull understanding; yet subtle enough in their dealings, and of an uncommon

boldness, which is often attended with gre
felicity ; but that which is most commendab
in them is, that they are most sure and co
stant in their friendship.

Great and full eyes in either man or woma
show the person to be for the most part sloth
ful, bold, envious, a bad concealer of secret
miserable, vain, given to lying, and yet of a ba
memory, slow in invention, weak in his inte
lectuals, and yet very much conceited of tha
little knack of wisdom he thinks himself mas
ter of. He whose eyes are hollow in his head
and therefore discerns excellently well at a grea
distance, is one that is suspicious, malicious
furious, perverse in his conversation, of an ex
traordinary memory, bold, cruel and false both
in words and deeds, threatening, vicious, luxu
rious, proud, envious, and treacherous ; but he
whose eyes are as it were starting out of his
head, is a simple foolish person, shameless, very
fertile, and easy to be persuaded either to vice
or virtue. He who looks studiously and acute-
ly with his eyes and eye-lids downwards, de-
notes thereby to be of a malicious nature, very
treacherous, false, unfaithful, envious, misera-
ble, impious towards God, and dishonest to-
wards men. He whose eyes are small and con-
veniently round, is bashful and weak, very cre-
dulous, liberal to others, and even in his con-
versation. He whose eyes look asquint, is

thereby denoted to be a deceitful person, unjust, envious, furious, a great liar, and as the effect of all this, miserable. He who hath a wandering eye, and which is rolling up and down, is for the most part a vain, simple, deceitful man, lustful, treacherous, or high-minded, an admirer of the fair sex, and one easy to be persuaded to virtue or vice. He or she whose eyes are twinkling, and which move forward or backward, shows the person to be luxurious, unfaithful, and treacherous, presumptuous, and hard to believe any thing that is spoken. If a person has any greenness mingled in the white of his eyes, such is commonly silly, and often very false, vain and deceitful, unkind to his friends, a great concealer of his own secrets, and very choleric. Those whose eyes are every way rolling up and down, or they who seldom move their eyes, and when they do, do as it were draw their eyes inwardly, and accurately fasten them upon some object, such are by their inclinations very malicious, vain-glorious, slothful, unfaithful, envious, false and contentious. They whose eyes are addicted to blood-shot, are naturally choleric, proud, disdainful, cruel without shame, perfidious, and much inclined to superstition. They that have eyes like oxen, are persons of good nutriment, but of a weak memory, are dull of understanding, and silly in their conversation. But he

whose eyes are neither too little nor too b
and inclined to black, do signify a man m
peaceable, honest, witty, and of a good und
standing: and one that, when need requires, w
be serviceable to his friend.

A long and thin nose denotes a man bo
furious, angry, vain, easy to be persuaded eit
to good or evil, weak and credulous. A lo
nose extended, the tip of it bending downwar
shows the person to be wise, discreet, sec
and officious, honest, faithful, and one who w
not be over-reached in bargaining.

A bottle-nose is what denotes a man to b
impetuous in obtaining his desires, also vai
false, luxurious, weak, and an uncertain ma
apt to believe, and easy to be persuaded. A
nose broad in the middle, and less towards th
end, denotes a vain talkative person, a liar, an
one of a hard fortune. He who hath a long an
great nose, is an admirer of the fair sex, bu
ignorant of the knowledge of any thing that i
good, extremely addicted to vice; assiduous in
obtaining what he desires, and very secret in
the prosecution of it; and though very ignorant,
would fain be thought very knowing.

A nose very sharp on the tip of it, and nei-
ther too long nor too short, too thick nor too
thin, denotes the person, if a man, to be of a
fretful disposition, always pining and peevish;
and if a woman, a scold, or contentious, wedded

to her own humours; of a morose and dogged carriage, and if married, a plague to her husband. A nose very round at the end of it, and having but little nostrils, shows the person to be munificent and liberal, true to his trust, but withal very proud, credulous and vain. A nose very long and thin at the end of it, and something round withal, signifies one bold in his discourse, honest in his dealings, patient in receiving, and slow in offering injuries, but yet privately malicious. He whose nose is naturally more red than any other part of his face, is thereby denoted to be covetous, impious, luxurious, and an enemy to goodness. A nose that turns up again, and is long and full on the tip of it, shows the person that has it to be bold, proud, covetous, envious, luxurious, a liar and deceiver, vain-glorious, unfortunate and contentious. He whose nose riseth high in the middle, is prudent and polite, and of great courage, honourable in his actions, and true to his word. A nose big at the end shows a person to be of a peaceable disposition, industrious and faithful, and of a good understanding. A very wide nose, with wide nostrils, denotes a man dull of apprehension, and inclined more to simplicity than wisdom, and withal contentious, vain-glorious, and a liar.

A great and wide mouth shows a man to be bold, warlike, shameless and stout, a great liar,

and as great a talker, also a great eater; but as to his intellectuals he is very dull, being for the most part very simple. A little mouth shows the person to be of a quiet and pacific temper, somewhat fearful, but faithful, secret, modest, bountiful, and but a little eater.

He whose mouth smells of a bad breath, is one of a corrupted liver or lungs, is oftentimes vain, wanton, deceitful, of indifferent intellects, envious, covetous, and a promise-breaker. He that has a sweet breath, is the contrary.

The lips, when they are very big and blubbering, show a person to be credulous, foolish, dull, and stupid, and apt to be enticed to any thing. Lips of a different size denote a person to be discreet, secret in all things, judicious and of good wit, but somewhat hasty. To have lips well coloured, and more thin than thick, shows a person to be good-humoured in all things, and more easily persuaded to good than evil. To have one lip bigger than the other shows variety of fortunes, and denotes the party to be of a dull, sluggish temper, and but of a very indifferent understanding, as being much addicted to folly.

When the teeth are small, and but weak in performing their office, and especially if they are short and few, though they show the person to be of a weak constitution, yet they denote him to be of a meek disposition, honest, faithful,

and secret in whatsoever he is intrusted with. To have some teeth longer and shorter than others, denotes a person to be of a good apprehension, but bold, disdainful, envious and proud. To have teeth very long and growing sharp towards the end, if they are long in chewing, and thin, denotes the person to be envious, gluttonous, bold, shameless, unfaithful, and suspicious. When the teeth look very brown or yellowish, whether they be long or short, it shows the person to be of a suspicious temper, envious, deceitful and turbulent. To have teeth strong and close together, shows the person to be of a long life, a desirer of novelties, and things that are fair and beautiful, but of a high spirit, and one that will have his humour in all things; he loves to hear news, and repeat it afterwards, and is apt to entertain any thing to his behalf. To have teeth thin and weak, shows a weak feeble man, and one of short life, and of a weak apprehension; but chaste, shamefaced, tractable and honest.

A tongue to be too swift of speech shows a man to be downright foolish, or at best but a very vain wit. A stammering tongue, or one that stumbles in the mouth, signifies a man of a weak understanding, and of a wavering mind, quickly in rage, and soon pacified. A very thick and rough tongue denotes a man to be apprehensive, subtle, and full of compliments,

yet vain and deceitful, treacherous, and prone to impiety. A thin tongue shows a man of wisdom and sound judgment, very ingenious, and of an affable disposition, yet sometimes timorous, and too credulous.

A great and full voice in either sex shows them to be of a great spirit, confident, proud, and wilful. A faint and weak voice, attended with but little breath, shows a person to be of a good understanding, a nimble fancy, a little eater, but weak of body, and of a timorous disposition. A loud and shrill voice which sounds clearly, denotes a person provident, sagacious, true, and ingenious, but withal capricious, vainglorious, and too credulous. A strong voice when a man sings, denotes him to be of a strong constitution, and of a good understanding, neither too penurious nor too prodigal, also ingenious, and an admirer of the fair sex. A weak and trembling voice shows the owner of it to be envious, suspicious, slow in business, feeble and fearful. A loud, shrill, and unpleasant voice signifies one bold and valiant, but quarrelsome and injurious, and altogether wedded to his own humours, and governed by his own counsels. A rough and hoarse voice, whether in speaking or singing, declares one to be a dull and heavy person, of much guts and little brains. A full and yet mild voice and pleasing to the hearer, shows the person to be

of a quiet and peaceable disposition, (which is a great virtue, and rare to be found in a woman) and also very thrifty and secret, not prone to anger, but of a yielding temper. A voice beginning low or in the bass, and ending high in the treble, denotes a person to be violent, angry, bold and secure.

A thick and full chin abounding with too much flesh, shows a man inclined to peace, honest and true to his trust, but slow in invention, and easy to be drawn either to good or evil. A peaked chin and reasonably full of flesh, shows a person to be of a good understanding, a high spirit, and laudable conversation. A double chin shows a peaceable disposition, but dull of apprehension, vain, credulous, a great supplanter, and secret in all his actions. A crooked chin, bending upwards and peaked for want of flesh, is by the rules of physiognomy, according to nature a very bad man, being proud, impudent, envious, threatening, deceitful, prone to anger and treachery, and a great thief.

The hair of young men usually begins to grow down upon their chins at 15 years of age, and sometimes sooner. These hairs proceed from the superfluity of heat; the fumes whereof ascend to their chin, like smoke to the funnel of a chimney; and because it cannot find an open passage by which it may ascend higher, it vents

itself forth in the hairs which are called the beard. There are very few, are almost no women at all that have hairs on their cheeks; and the reason is, those humours which cause hair to grow on the cheeks of a man are by a woman evacuated in the monthly courses, which they have more or less, according to the heat or coldness of their constitution, and the age and motion of the moon. Yet sometimes women of a hot constitution have hair to be seen on their cheeks, but more commonly on their lips, or near unto their mouths, where the heat most aboundeth. And where this happens, such women are much addicted to the company of men, and of a strong and manly constitution. A woman who hath little hair on her cheeks, or about her mouth and lips, is of a good complexion, weak constitution, shamefaced, mild and obedient; whereas a woman of more hot constitution is quite otherwise. But in a man, a beard well composed and thick of hair, signifies a man of good nature, honest, loving, sociable, and full of humanity: on the contrary he that hath but a little beard, is for the most part proud, pining, peevish, and unsociable. They who have no beards have always shrill and strange kind of squeaking voices, and are of a weak constitution, which is apparent in the case of eunuchs, who, after they are deprived of their virility,

are transformed from the nature of men into the condition of women.

Great and thick ears are a certain sign of a foolish person, or a bad memory and worse understanding. But small and thin ears show a person to be of a good wit, grave, secret, thrifty, modest, resolute, of a good memory, and one willing to serve his friend. He whose ears are longer than ordinary, is thereby signified to be a bold man, uncivil, vain, foolish, serviceable to another more than himself, and a man of small industry, but of a great stomach.

A face apt to sweat at every motion, shows the person to be of a hot constitution, vain and luxurious, of a good stomach, but a bad understanding, and a worse conversation. A very fleshy face shows the person to be of a fearful disposition, but a merry heart, and withal bountiful and discreet, easy to be entreated, and apt to believe every thing. A lean face, by the rules of physiognomy, denotes the person to be of a good understanding, but somewhat capricious and disdainful in his conversation. A little and round face shows a person to be simple, very fearful, of a bad memory, and a clownish disposition. A plump face full of carbuncles, shows a man to be a great drinker of wine, vain, daring, and soon intoxicated. A face red or high-coloured, shows a man to be much inclined to choler, and one that will be

soon angry and not easily pacified. A long and lean face shows a man to be both bold, injurious, and deceitful. A face every way of a due proportion, denotes an ingenious person, one fit for any thing, and very much inclined to what is good. One of a broad full fat face is, by the rules of physiognomy, of a dull, lumpish, heavy constitution, and that for one virtue has three vices. A plain flat face, without any rising, shows a person to be very wise, loving and courtly in his carriage, faithful to his friend, and patient in adversity. A face sinking down a little, with crosses in it, inclining to leanness, denotes a person to be very laborious, but envious, deceitful, false, quarrelsome, vain, and silly, of a dull and clownish behaviour. A face of a handsome proportion, and more inclining to fat than lean, shows a person just in his actions, true to his word, civil and respectful in his behaviour, of an indifferent understanding, and of an extraordinary memory. A crooked face, long and lean, denotes a man endued with as bad qualities as the face is with ill features. A face broad about the brows, and sharper and less as it grows towards the chin, shows a man simple and foolish in managing his affairs, vain in his discourse, envious in his nature, deceitful, quarrelsome, and rude in his conversation. A face well coloured, full of good features, and of

an exact symmetry, and a just proportion in all its parts, and which is delightful to look upon, is commonly the index of a fairer mind, and shows a person to be well disposed; but withal declares that virtue is not so impregnably seated there, but that by strong temptations (especially by the fair sex) it may be supplanted and overcome by vice. A pale complexion shows the person not only to be fickle but very malicious, treacherous, false, proud, presumptuous, and extremely unfaithful. A face well coloured shows the person to be of a praiseworthy disposition, and a sound complexion, easy of belief, and respectful to his friend, ready to do a courtesy, and very easy to be drawn to any thing.

A great head and round withal, denotes the person to be secret, and of great application in carrying on business, and also ingenious, and of a large imaginative faculty and invention; and likewise laborious, constant and honest. The head whose gullet stands forth, and inclines towards the earth, signifies a person thrifty, wise, peaceable, secret, of a retired temper, and constant in the management of his affairs. A long head and face, and great withal, denotes a vain, foolish, idle, and weak person, credulous and very envious. To have one's head always shaking, and moving from side to side, denotes a shallow, weak person, unstable

in all his actions, given to lying, a great de-
ceiver, a great talker, and prodigal in all his
fortunes. A big head and broad face show a
man to be very courageous, a great hunter after
women, very suspicious, bold and shameless.
He who hath a very big head, but not so pro-
portionate as it ought to the body, if he hath
a short neck and crooked gullet, is generally a
man of apprehension, wise, secret, ingenious,
of sound judgment, faithful, true and courte-
ous to all. He who hath a little head, and long
slender throat, is for the most part a man very
weak, yet apt to learn, but unfortunate in his
actions. And so much shall suffice with res-
pect to the judgment from the head and face.

CHAP. III.

Of Judgments drawn from several other parts of Man's Body.

In the body of man, the head and face are the principal parts, being the index which heaven has laid open to every one's view to make a judgment therefrom, therefore I have been the larger in my judgment from the several parts thereof. But as to the other parts, I shall be

much more brief, as not being so obvious to the eyes of men: yet I would proceed in order.

The throat, if it be white, whether it be fat or lean, shows a man to be vain-glorious, timorous, wanton, and very subject to choler. If the throat be so thin and lean that the veins appear, it shows a man to be weak, slow, and of a dull and heavy constitution.

A long neck shows one to have a long and slender foot, and that the person is stiff and inflexible either to good or evil. A short neck shows one to be witty and ingenious, but deceitful and inconstant, well skilled in the use of arms, and yet cares not to use them, but is a great lover of peace and quietness.

A lean shoulder bone signifies a man to be weak, timorous, peaceful, not laborious, and yet fit for any employment. He whose shoulder bones are of a great bigness is commonly, by the rule of physiognomy, a strong man, faithful, but unfortunate; somewhat dull of understanding, very laborious, a great eater and drinker, and one equally contented in all conditions. He whose shoulder bone seems to be smooth, is by the rule of nature modest in his look, and temperate in all his actions, both at bed and board. He whose shoulder bone bends and is crooked inwardly, is commonly a dull person and deceitful.

Long arms hanging down and touching the

knees, though such arms are rarely seen, denotes a man liberal, but withal vain-glorious, proud, and inconstant. He whose arms are very short in respect to the stature of his body, is thereby signified to be a man of high and gallant spirit, of a graceful temper, bold and warlike. He whose arms are full of bones, sinews and flesh, is a great desirer of novelties and beauties, and one that is very credulous and apt to believe every thing. He whose arms are very hairy, whether they be lean or fat, is for the most part a luxurious person, weak in body and mind, very suspicious, and malicious withal. He whose arms have no hair on them at all, is of a weak judgment, very angry, vain, wanton, credulous, easily deceived himself, yet a great deceiver of others, no fighter, and very apt to betray his dearest friends.

CHAP. IV.

Of Palmistry, showing the various Judgments drawn from the Hand.

Being engaged in this part of the work to show what judgment may be drawn, according to physiognomy, from the several parts of the body, and coming in order to speak of the hands, it

has put me under the necessity of saying something about palmistry, which is judgment made of the conditions, inclinations, and fortunes of men and women, from the various lines and characters nature has imprinted in their hands, which are almost as various as the hands that have them.

The reader should remember, that one of the lines of the hand, and which indeed is reckoned the principal, is called the line of life; this line incloses the thumb, separating it from the hollow of the hand. The next to it, which is called the natural line, takes its beginning from the rising of the fore-finger, near the line of life, and reaches to the table line, and generally makes a triangle. The table line, commonly called the line of fortune, begins under the little finger, and ends under the middle finger. The girdle of Venus, which is another line so called, begins near the first joint in the little finger, and ends between the fore-finger and the middle finger. The line of death is that which plainly appears in a counter line to that of life, and is called the sister line, ending usually as the other ends; for when the line of life is ended, death comes, and it can go no further. There are lines in the fleshy parts, as in the ball of the thumb, which is called the mount of Venus; under each of the fingers are also mounts, which are each governed by several

planets; and the hollow of the hand is called the plain of Mars.

I proceed to give judgment from these several lines. In palmistry, the left hand is chiefly to be regarded, because therein the lines are most visible, and have the strictest communication with the heart and brain. In the next place, observe the line of life, and if it be fair, extended to its full length, and not broken with an intermixture of cross lines, it shows long life and health, and it is the same if a double line appears, as there sometimes does. When the stars appear in this line, it is a signification of great losses and calamities; if on it there be the figures of two O's or a Y, it threatens the person with blindness; if it wraps itself about the table-line, then does it promise wealth and honour to be attended by prudence and industry. If the line be cut and jagged at the upper end, it denotes much sickness; if this line be cut by any lines coming from the mount of Venus, it declares the person to be unfortunate in love and business also, and threatens him with sudden death. A cross between the line of life and the table-line, shows the person to be very liberal and charitable, one of a noble spirit. Let us see the signification of the table-line.

The table-line, when broad and of a lively colour, shows a healthful constitution, and a

quiet contented mind, and of a courageous spirit: but if it has crosses towards the little finger, it threatens the party with much affliction by sickness. If the line be double, or divided into three parts at any of the extremities, it shows the person to be of a generous temper, and of a good fortune to support it; but if this line be forked at the end, it threatens the person shall suffer by jealousies, and doubts, and loss of riches gotten by deceit. If three points such as these ∴ are found in it, they denote the person prudent and liberal, a lover of learning, and of a good temper; if it spreads towards the fore and middle finger and ends blunt, it denotes preferment. Let us now see what is signified by the middle-line. This line has in it oftentimes (for there is scarce a hand in which it varies not) divers very significant characters. Many small lines between this and the table-line threaten the party with sickness, and also give him hopes of recovery. A half cross branching into this line declares the person shall have honour, riches, and good success in all his undertakings. A half moon denotes cold and watery distempers; but a sun or star upon this line, denotes prosperity and riches: this line, double in a woman, shows she will have several husbands, but no children.

The line of Venus, if it happens to be cut or divided near the fore-finger, threatens ruin to

the party, and that it shall befal him by means of lascivious women and bad company. Two crosses upon this line, one being on the fore-finger and the other bending towards the little finger, show the party to be weak, and inclined to modesty and virtue; indeed it generally denotes modesty in women; and therefore those who desire such, usually choose them by this standard.

The liver line, if it be straight, and crossed by other lines, shows the person to be of a sound judgment, and a piercing understanding; but if it be winding, crooked, and bending outward, it draws deceit and flattery, and the party is not to be trusted. If it makes a triangle, or quadrangle, it shows the person to be of a noble descent, and ambitious of honour and promotion. If it happens that this ine and the middle line begin near each other, it denotes a person to be weak in his judgment, if a man; but if a woman, in danger by hard labour.

The plain of Mars being in the hollow of the hand, most of the lines pass through it, which renders it very significant. This plain being hollow, and the lines being crooked and distorted, threatens the party to fall by his enemies. When the lines beginning at the wrist are long within the plain, reaching to the brawn of the hand, that shews the person to be

much given to quarreling, often in broils, and of a hot and fiery spirit, by which he shall suffer much damage. If deep and large crosses be in the middle of the plain, it shows the party shall obtain honour by martial exploits; but if it be a woman, she shall have several husbands, and easy labour with her children.

The line of Death is fatal, when crosses or broken lines appear in it; for they threaten the person with sickness and a short life. A clouded moon appearing therein, threatens a child-bed woman with death. A bloody spot in the line, denotes a violent death. A star like a comet, threatens ruin by war, and death by pestilence. But if a bright sun appears therein, it promises long life and prosperity.

As for the lines of the wrist being fair, they denote good fortune; but if crossed and broken, the contrary.

CHAP. V.

Judgments according to Physiognomy, drawn from the several parts of the Body, from the Hands to the Feet.

A LARGE and full breast shows a man valiant and courageous, but withal proud and hard to

deal with, quickly angry, and very apprehensive of an injury: he whose breast is narrow, and which riseth a little in the middle of it, is, by the best rule of physiognomy, of a clear spirit, of a great understanding, good in counsel, very faithful, clean both in mind and body, yet as an enemy to this, he is soon angry, and inclined long to keep it. He whose breast is somewhat hairy is very luxurious, and serviceable to another. He who hath no hair upon his breast, is a man weak by nature, of a slender capacity, and very timorous, but of a laudable life and conversation, inclined to peace, and much retired to himself.

The back of the chine bone, if the flesh be any thing hairy and lean, and higher than any other part that is behind, signifies a man shameless, beastly, and withal malicious. He whose back is large, big, and fat, is thereby denoted to be a strong and stout man, but of a heavy disposition, vain, slow, and full of deceit.

He or she whose belly is soft all over the body, is weak, lustful, and fearful upon little or no occasion, of a good understanding, and an excellent invention, but a little eater, faithful, but of various fortune, and meets with more adversity than prosperity. He whose flesh is rough and hard, is a man of strong constitution, and very bold, but vain, proud, and of a cruel temper. A person whose skin is

smooth, fat, and white, is a person curious, vain-glorious, timorous, shamefaced, malicious, false, and too wise to believe all he hears.

A thigh full of strong bristly hair, and the hair inclined to curl, signifies one lustful and licentious. Thighs with but little hair, and those soft and slender, show the person to be reasonably chaste, and one that has no great desire to coition, and who will have but few children.

The legs of both men and women have a fleshy substance behind, which are called calves, which nature hath given them (as in our book of living creatures we have observed) in lieu of those long tails which most other creatures have pendent behind. Now a great calf, and he whose legs are of a great bone, and hairy withal, denotes the person to be strong, bold, secure, dull in understanding, and slow in business, inclined to procreation, and for the most part fortunate in his undertakings. Little legs, and but little hair on them, show the person to be weak, fearful, of a quick understanding, and neither luxurious at bed nor board.

The feet of either men or women, if broad and thick with flesh, and long in figure, especially if the skin feels hard, they are by nature of a strong constitution, and gross nutriment, but of a weak intellect, which renders the understanding vain. But feet that are thin and

lean, and of a soft skin, show the person to be weak of body, but of a strong understanding, and of an excellent wit.

The soles of the feet do administer plain and evident signs, whereby the disposition and constitution of men and women may be known, as do the palms of their hands, as being full of lines, by which lines all the fortunes or the misfortunes of men and women may be known, and their manners and inclinations made plainly to appear. But this in general we may take notice, as that many long lines and strokes do presage great affliction, and a very troublesome life, attended with much grief and toil, care, poverty, and misery; but short lines, if they are thick and full of cross lines, are yet worse in every degree. Those, the skin of whose soles are very thick and gross, are for the most part able, strong, and venturous. Whereas, on the contrary, those, the skin of whose soles of their feet is thin, are generally weak and timorous.

I shall now, before I conclude, (having given an account of what judgments may be made by observing the several parts of the body, from the crown of the head to the soles of the feet) give an account of what judgments may be drawn by the rule of physiognomy from things extraneous which are found upon many, and which indeed to them are parts of the body,

but are so far from being necessary parts that they are the deformity and burden of it, and speak of the habits of the body, as they distinguish persons.

Of Crooked and Deformed Persons.

A crooked breast or shoulder, or the exuberance of flesh in the body either of man or woman, signifies the person to be extremely parsimonious and ingenious, and of a great understanding, but very covetous, and scraping after the things of the world, attended also with a very bad memory, being also very deceitful and malicious: they are seldom in a medium, but either virtuous or extremely vicious. But if the person deformed hath an excrescence on his breast instead of the back, he is for the most part of a double heart and very mischievous.

Of the divers Manners of going, and particular Posture both of Men and Women.

He or she that goes slowly, making great steps as they go, are generally persons of bad memory, and dull of apprehension, given to loitering, and not apt to believe what is told them. He who goes apace, and makes short steps, is most successful in all his undertakings,

swift in his imagination, and humble in the disposition of his affairs. He who makes wide and uneven steps, and sidelong withal, is one of a greedy sordid nature, subtle, malicious, and willing to do evil.

Of the Gait or Motion in Men or Women.

Every man hath a certain gait or motion, and so in like manner hath every woman; for a man to be shaking his head, or using any light motion with his hands or feet, whether he stands or sits, or speaks, is always accompanied with an extravagant motion, unnecessary, superfluous and unhandsome. Such a man, by the rule of physiognomy, is vain, unwise, unchaste, a detractor, unstable, and unfaithful. He or she whose motion is not much when discoursing with any one, is for the most part wise and well bred, and fit for any employment, ingenious and apprehensive, frugal, faithful, and industrious in business. He whose posture is forwards and backwards, or, as it were whisking up and down, mimical, is thereby denoted to be a vain silly person, of a heavy and dull wit, and very malicious. He whose motion is lame and limping, or otherwise imperfect, or that counterfeits an imperfection, is denoted to be envious, malicious, false, and detracting.

Judgments drawn from the Stature of Man.

Physiognomy draws several judgments also from the stature of man, which take as followeth: if a man be upright and straight, inclined rather to leanness than fat, it shows him to be bold, cruel, proud, clamorous, hard to please, and harder to be reconciled when displeased, very frugal, deceitful, and in many things malicious. To be of tall stature, and corpulent with it, denotes him to be not only handsome but valiant also, but of no extraordinary understanding, and which is worst of all, ungrateful and trepanning. He who is extremely tall, and very lean and thin, is a projecting man, that designs no good to himself, importunate to obtain what he desires, and extremely wedded to his own humour. He who is thick and short, is vain, envious, suspicious, and very shallow of apprehension, easy of belief, but very long before he will forget an injury. He who is lean and short, but upright withal, is, by the rule of physiognomy, wise and ingenious, bold and confident, and of a good understanding, but of a deceitful heart. He who stoops as he goes, not so much by age as custom, is very laborious, a retainer of secrets, but very incredulous, and not easy to believe every vain report he hears. He that goes with his belly stretch-

ing forth, is sociable, merry, and easy to be persuaded.

CHAP. IV.

Of the Power of the Celestial Bodies over Men and Women.

HAVING spoken thus largely of Physiognomy, and the judgments given thereby concerning the dispositions and inclinations of men and women, drawn by the said art, from every part of the bodies of men and women, it will be convenient here to show how all these things come to pass; and how it is that the secret inclinations and future fate of men and women may be known from the consideration of the several parts of the bodies. They arise from the power and dominion of superior powers over bodies inferior; by superior powers I understand the 12 Signs of the Zodiac, whose signs, characters, and significations are as follow.



Aries, the Ram, which governs the head and face.

Taurus, the Bull, which governs the neck.

Gemini, the Twins, governs the hands and arms.

Cancer, the Crab, governs the breast and stomach.

Leo, the Lion, governs the back and heart.

Virgo, the Virgin, governs the belly and bowels.

Libra, the Balances, governs the reins and loins.

Scorpio, the Scorpion, governs the secret parts.

Sagittary, the Centaur, governs the thighs.

Capricorn, the Goat, governs the knees.

Aquarius, the Water-Bearer, governs the legs and ancles.

Pisces, the Fish, governs the feet.

It is here furthermore necessary to let the reader know, that the ancients have divided the Celestial Sphere into twelve parts, according to the number of these signs, which are termed houses; and have placed the twelve signs in their houses, as in the first house Aries, in the second Taurus, in the third Gemini, &c. And besides their assigning the twelve signs to the twelve houses, they allot to each house its proper business.

To the first house they give the signification of life.

The second house has the signification of wealth, substance, or riches.

The third is the mansion of brethren.

The fourth the house of parentage.

The fifth is the house of children.

The sixth is the house of sickness or disease.

The seventh is the house of wedlock, and also of enemies, because oftentimes a wife or husband proves the worst enemy.

The eighth is the house of death.

The ninth is the house of religion.

The tenth is the signification of honour.

The eleventh of friendship.

The twelfth is the house of affliction and woe.

Now, astrologically speaking, a house is a certain space in the heaven or firmament, divided by certain degrees, through which the planets have their motion, and in which they have their residence, and are situate. And these houses are divided by thirty degrees, for every sign has so many degrees. And these signs or houses are called the houses of such and such planets as make their residence therein, and are such as delight in them, and as they are deposited in such and such houses are said to be either dignified or debilitated. For though the planets in their several revolutions go through all the houses, yet there are some houses which they are more properly said to delight in: As, for instance, Aries and Scorpio are the houses of Mars; Taurus and Libra, of Venus; Gemini and Virgo, of Mercury; Sagittarius and Pisces are the houses of Jupiter; Capricorn and Aquarius are the houses of Saturn; Leo is the house of the Sun; and Cancer is the house of the Moon.

Now to sum up the whole, and show how this concerns physiognomy, is thus: as the body of man, as we have shown, is not only governed by the signs and planets, but every part is appropriated to one or another of them, so ac-

cording to the particular influence of each sign or planet, so governing, is disposition, inclination, and nature of the person governed. For such and such tokens and marks do show a person to be born under such and such a planet; so according to the nature, power, and influences of the planets, is the judgment to be made of that person. By which the reader may see that the judgments drawn from physiognomy are grounded upon a certain verity.

THE MIDWIFE'S VADE-MECUM,

CONTAINING

PARTICULAR DIRECTIONS FOR MIDWIVES, NURSES, &c.

Those that take upon them the office of midwives, ought to take care to fit themselves for that employment by the knowledge of those things that are necessary for the discharge thereof. And such persons ought to be of the middle age, neither too young nor too old; and of a good habit of body, not subject to disease, fears, or sudden frights. Nor are the qualifications assigned to a good surgeon im-

proper for a midwife, viz. a lady's hand, a hawk's eye, a lion's heart; to which may be added, activity of body, and a convenient strength, with caution and diligence; not subject to drowsiness or impatience. She ought also to be sober, affable, courteous, chaste, not covetous, or subject to passion, but bountiful and compassionate; and, above all, she ought to be qualified as the Egyptian midwives of old, that is, to have the fear of God, which is the principal thing in every state and condition, and will furnish her, on all occasions, both with wisdom and discretion.

When the time of birth draws near, and the good woman finds her travailing pains begin to come upon her, let her send for her midwife in time, better too soon than too late, and get those things ready which are necessary upon such occasions. When the midwife comes, let her first find whether the true time of her birth be come; for by not properly observing this, many a child hath been spoiled, and the life of the mother endangered; or at least given her double the pain needful. For unskilful midwives, not minding this, have given things to force down the child, and thereby disturb the course of her natural labour; whereas nature works best in her own time and way. I do confess, it is somewhat difficult to know the true time of women's labour, they being trou-

bled with pains long before their true labour comes, even some weeks before; the reason of which I conceive to be the heat of their reins; and this may be readily known by the swelling of their legs; and therefore, when women with child find their legs swell overmuch, they may be assured that their reins are too hot. For the cure whereof, let them cool the reins, before the time of their labour, with oil of poppies, and oil of violets, or water-lilies, by anointing the reins of their backs with them; for such women whose reins are over hot, have usually hard labours. But in this case, above all the remedies that I know, I prefer the decoction of them in water; and then having strained and clarified it with the white of an egg, boil it into a syrup with its equal weight of sugar, and keep it for use.

There are two skins that compass the child in the womb; the one is the *amnios*, and this is the inner skin; the other is the *allantois*, and this is the skin that holds the urine of the child during the time that it abides in the womb. Both these skins, by the violent stirring of the child near the time of its birth, are broken; and then the urine and sweat of the child contained in them fall down to the neck of the womb; and this is that which the midwives call *the waters*, and is an infallible sign that the birth is very near; for the child is no

more able to subsist in the womb after those skins are broken, than a naked man is in the cold air. These waters, if the child come presently after them, facilitate the labour, by making the passage slippery; and therefore the midwife must have a care that she force not the waters away, for nature knows better the true time of the birth than she, and usually retains the waters till that time.

GENUINE RECEIPTS FOR CAUSING SPEEDY DELIVERY.

A LOADSTONE held in the labouring woman's hand. Take wild tansey, bruise and apply it to the woman's nostrils. Take also date stones, and beat them to powder, and let her take a drachm of them in white wine at a time.

Take parsley, bruise it, and press out the juice, and put it up (being so dipped) into the mouth of the womb, and it will presently cause the child to come away, though it be dead, and the after-burden also; besides, it cleanseth the womb, and also the child in the womb, of all gross humours.

Let no midwife ever force away a child, unless she is sure it is dead. I once was where a woman was in labour, which being very hard,

her midwife sent for another midwife to assist her, which midwife sending the first down stairs, and designing to have the honour of delivering the woman herself, forced away the body of the child, and left the head behind; of which the woman was forced afterwards to be delivered by a man-midwife.

After the child is born, great care is to be taken by the midwife in cutting the navel-string, which, though by some is accounted but a trifle, yet it requires none of the least skill of a midwife, to do it with that prudence and judgment that are requisite. And that it may be done so, you must consider, as soon as the child is free from its mother, whether it is weak or strong; if the child be weak, put back gently part of the vital and natural blood in the body of the child by its navel (for both the vital and natural spirits are communicated by the mother to the child by its navel-string); for that doth much recruit a weak child; but if the child be strong, you may forbear.

As to the manner of cutting the child's navel-string, let the ligature or binding be very strong; and be sure not to cut it off very near the binding, lest the binding unloose. You need not fear to bind the navel-string very hard, because it is void of sense, and that part of the navel-string which you leave on falls off of its own accord in a few days; the whole course of

nature being now changed in the child, it having another way ordained to nourish it. It is no matter with what instrument you cut it off, so it be sharp and you do it cleverly. The piece of the navel-string that falls off, be sure you keep it from touching the ground; remember what I have before told you concerning this matter, and if you keep it by you it may be of use. The navel-string being cut off, put a little cotton or lint to the place, to keep it warm, lest the cold enter the body of the child, which it will be apt to do if it be not bound up hard enough.

The next thing to be done, is to bring away the after-birth, or secundine, else it will be very dangerous for the woman. But this must be done by gentle means, and without delay, for in this case especially delays are dangerous; and whatever I have set down before, as good to cause speedy delivery, and bring away the after-birth. And after the birth and after-birth are brought away, if the woman's body be very weak, keep her not too warm; for extremity of heat doth weaken nature and dissolve the strength; bnt whether she be weak or strong, let no cold air come near her at first; for cold is an enemy to the spermatic parts. If cold goes into the womb, it increases the after-pains, causes swelling in the womb, and does great hurt to the nerves.

If what I have written be carefully observed by midwives, and such nurses as keep women in their lying-in, by God's blessing, the child-bed woman may do very well, and both midwife and nurse gain credit and reputation. For though these directions may in some things thwart the common practice, yet they are grounded upon experience, and will infallibly answer the end.

But there are several accidents that lying-in women are subject unto, which must be provided against; and these I will speak of next.

The first I shall mention are after-pains, about the cause of which, authors very much differ; some think they are caused by the thinness, some by the sliminess, and others by the sharpness of the blood; but my own opinion is, they proceed from cold and water. But whatever the cause may be, this I know, that if my foregoing directions be observed, they will be very much abated, if not quite taken away. But in case they do happen, boil an egg, and pour out the yolk of it, with which mix a spoonful of cinnamon-water, and let her drink of it; and if you mix it with two grains of ambergris, it will be better.

The second accident lying-in women are subject to is excoriation in the lower part of the womb. To help this, use oil of sweet almonds,

or rather oil of St. John's wort, to anoint the part with.

Another accident is, that sometimes, through very hard labour, and the great straining to bring the child into the world, the lying-in woman comes to be troubled with the hemorrhoids or piles. To cure this, let her use polypodium bruised, and boiled in her meat and drink.

A fourth thing that often follows is, the retention of the menses; this is very dangerous, and, if not remedied, proves mortal. But for this, let her take such medicines as strongly provoke the terms; and such are peony roots, dittany, juniper-berries, betony, centaury, sage, savory, pennyroyal, feverfew.

The last thing I shall mention is, the overflowing of the menses. This happens not so often as the foregoing, but yet sometimes it does; and in such cases take shepherd's purse, either boiled in any convenient liquor, or dried and beaten to powder, and you will find it very good to stop them.

Having thus finished my Vade-Mecum for Midwives, before I conclude I will add something of the choice and qualifications of a good nurse; that those who have occasion for them, may know how to order themselves, for the good of the children whom they nurse.

1. Let her age be between 20 and 30, for then she is in her prime.

2. Let her be in health, for her sickness infects the milk, and the milk the child.

3. Let her be a prudent woman, for such a one will be careful of the child.

4. Let her be not too poor; for if she wants, the child must want too.

5. Let her be well bred; for ill bred nurses corrupt good nature.

6. If it be a boy that is to be nursed, let the nurse be such a one whose last child was a boy, and so it will be the more agreeable; but if it be a girl, let the nurse be one whose last child was a girl.

7. If the nurse has a husband, see that he be a good likely man, and not given to debauchery; for that may have an influence upon the child.

8. In the last place, let the nurse take care that she be not with child herself; for, if so, she must of necessity either spoil her own, or yours, or both.

To a nurse thus qualified, you may put your child without danger. And let such a nurse take the following directions, for the better governing and ordering herself in that station.

Approved Directions for Nurses.

1. Let her use her body to exercise. If she hath nothing else to do, let her exercise herself by dancing the child; for moderate exercise causeth good digestion; and I am sure good blood must needs make good milk, and good milk cannot fail making a thriving child.

2. Let her live in good air; there is nothing more natural than this. It is the want of this makes so many children die in London; and even those few that live are not of the best constitutions, for gross and thick air makes unwieldy bodies and dull wits.

3. Let her be careful of her diet, and avoid all salt meats, garlics, leeks, onions, and mustard, excessive drinking of wine, strong beer, or ale, for they trouble the child's body with choler: cheese, both new and old, afflicts it with melancholy, and all fish with phlegm.

4. Let her never deny herself sleep when she is drowsy, for by that means she will be more wakeful when the child cries.

5. Let her avoid all disquiets of mind, anger, vexation, sorrow, and grief; for these things very much disorder a woman, and therefore must needs be hurtful to her milk.

6. If the nurse's milk happen to be corrupted by an accident, as sometimes it may be, being

either too hot or too cold, in such cases let her diet be good, and let her observe the cautions which have already been given her. And then, if her milk be too hot, let her cool it with endive, succory, lettuce, sorrel, purslain, and plantain; if it be too cold, let her use beverage, vervain, buglos, mother of thyme, and cinnamon; and let her observe this general rule, that whatsoever strengthens the child in the womb, the same attends the milk.

7. If the nurse wants milk, the thistle, commonly called the lady's thistle, is an excellent thing for the breeding of milk, there being few things growing (if any) that breed more and better milk than that doth; also the hoofs of the forefeet of the cow, dried and beaten to powder, and a drachm of the powder taken every morning in any convenient liquor, increase milk.

Choice Remedies for increasing Milk.

If any nurse be given to much fretting, it makes her lean, and hinders digestion; and she can never have store of milk, nor what she hath be good. Bad meats and drinks also hinder the increase of milk, and therefore ought to be forborne. A woman that would increase her milk, should eat the best of food, (that is, if she can get it,) and let her drink milk where-

in fennel seeds have been steeped. Let her take barley-water, and burrage, and spinach; also goat's milk, and lamb sodden with verjuice. Let her also comfort the stomach with confection of aniseed, carraway, and cummin seeds, and also use those seeds sodden in water; also take barley-water, and boil therein green fennel and dill, and sweeten it with sugar, and drink it at pleasure.

Hot fomentations open the breasts, and attract the blood, as the decoction of fennel, smallage, or stamped mint applied. Or, take fennel and parsley, green, each a handful, boil and stamp them, and barley-meal half an ounce, gith seed a drachm, storax, calamint, two drachms, oil of lilies two ounces, and make a poultice.

Lastly, take half an ounce of deer's suet, and as much parsley roots, an ounce and a half of barley-meal, three drachms of red storax, and three ounces of oil of sweet almonds; boil the roots well, and beat them to pap, then mingle the other amongst them, and put it warm to the nipples, and it will increase the milk.

And thus, courteous reader, I have at length finished what I have designed; and can truly affirm, that thou hast here those receipts, remedies, and directions given unto thee with respect to child-bearing women, midwives and nurses, that are worth their weight in gold, and

will assuredly answer the end, whenever thou hast occasion to make use of them, they not being things taken on trust from tradition or hearsay, but the result and dictates of sound judgment and experience.

CONCLUSION.

Courteous Reader,

In the Works of the renowned and famous philosopher, Aristotle, you have got laid before you a Collection of the best Observations on the Secrets of Nature, that ever the world was favoured with on that subject. Let me now entreat you, who have read them, and all those who may hereafter do so, to mark well what is therein contained, and thereby direct your future conduct, which you will find to your advantage. Whatever young and inconsiderate persons may think or say of what is herein contained, it is absolutely necessary to be known; and, when reduced to practice, may prove the happy means of preventing many fatal and lamentable consequences, which ignorance and inconsideration produce. Farewell.

SYPHILIS, OR VENEREAL DISEASE.

USEFUL REMEDIES.

OF THE VIRULENT GONORRHŒA.

The Virulent Gonorrhœa is an involuntary discharge of infectious mucus from the parts of generation in either sex. It generally makes its appearance within eight or ten days after the infection has been received; sometimes it appears in two or three days, and at other times not before the end of four or five weeks. Previous to the discharge, the patient feels an itching, with a small degree of pain, in the genitals. Afterwards a thin glary matter begins to distil from the urinary passage, which stains the linen, and occasions a small degree of titillation, particularly at the time of making water; this gradually increasing, arises at length to a degree of heat and pain, which are chiefly perceived about the extremity of the

urinary passage, where a slight degree of redness and inflammation likewise begins to appear.

As the disorder advances, the pain, heat of urine, and running, increase, while fresh symptons daily ensue. In men, the erections become painful and involuntary, and are more frequent and lasting than when natural. This symptom is most troublesome when the patient is warm in bed.

The pain which was at first only perceived towards the extremity, now begins to reach up all the urinary passage, and is more intense just after the patient has done making water. The running gradually recedes from the colour of semen, grows yellow, and at length puts on the appearance of mucus.

When the disorder has arrived at its height, all the symptoms are more intense; the heat of urine is so great, that the patient dreads the making water; and though he feels a constant inclination this way, yet it is rendered with the greatest difficulty, and often only by drops; the involuntary erections now become extremely painful and frequent; there is also a pain, heat, and sense of fulness about the seat, and the running is plentiful and sharp, of a brown, greenish, and sometimes of a bloody colour.

By a proper treatment, the violence of the

symptoms gradually abate; the heat of urine goes off; the involuntary and painful erections, and the heat and pain about the seat, become easier; the running gradually decreases, grows whiter and thicker, till at last it entirely disappears.

By attending to these symptoms, the gonorrhœa may be generally distinguished from any other disease. There are, however, some few disorders for which it may be mistaken, as an ulcer of the kidneys or bladder, the *fluor albus*, or whites, in women, &c. But in the former of these, the matter comes away only with the urine, or when the sphincter or the bladder is open; whereas in a gonorrhœa the discharge is constant. The latter is more difficult to distinguish, and must be known chiefly from its effects; as pain, communicating the infection, &c.

Regimen.—When a person has reason to suspect that he has caught the venereal infection, he ought most strictly to observe a cooling regimen, to avoid every thing of a heating nature, as wines, spirituous liquors, rich sauces, spices, salted, high-seasoned, and smoke-dried provisions, particularly salt itself in every shape; as also all aromatic and stimulating vegetables, as onions, garlic, shalot, nutmeg, mustard, cinnamon, mace, ginger, and such like. His food ought chiefly to consist of mild

vegetables, milk, broths, light puddings, panado, gruels, &c. His drink may be barley-water, milk and water, or clear whey. Of these he ought to drink plentifully. Violent exercise of all kinds, especially riding on horseback, and venereal pleasures, are to be avoided. The patient must beware of cold, and when the inflammation is violent, he ought to keep his bed.

MEDICINE.—A virulent gonorrhœa can rarely be cured speedily and effectually at the same time. The patient ought, therefore, not to expect, nor the physician to promise it. It will often continue for two or three weeks, and sometimes for five or six, even where the treatment has been very proper.

Sometimes, indeed, a slight infection may be carried off in a few days, by bathing the parts in warm milk and water, and injecting frequently up the urethra a little sweet oil or linseed tea, about the warmth of new milk. Should these not succeed in carrying off the infection, they will at least have a tendency to lessen its virulence.

To effect a cure, however, astringent injections will generally be found necessary. These may be various ways prepared, but I think those made with the white vitriol are both more safe and efficacious. They can be made stronger or weaker as circumstances may re-

quire; but it is best to begin with the more gentle, and increase their power if necessary. I generally ordered a drachm of white vitriol to be dissolved in eight or nine ounces of common or rose-water, and an ordinary syringe-full of it to be thrown up three or four times a-day. If this quantity does not perform a cure, it may be repeated, and the dose increased.

Whether injections be used or not, cooling purges are always proper in the gonorrhœa. They ought not, however, to be of the strong drastic kind. Whatever raises a violent commotion in the body, increases the danger, and tends to drive the disease deeper into the habit. Procuring two or three stools every second or third day for the first fortnight, and the same number every fourth or fifth day for the second, will generally be sufficient to remove the inflammatory symptoms, to diminish the running, and to change its colour and consistence. It gradually becomes more white and ropy, as the virulence abates.

When the inflammatory symptoms run high, bleeding is always necessary at the beginning. This operation, as in other topical inflammations, must be repeated according to the strength and constitution of the patient, and the vehemence and urgency of the symptoms.

Medicines which promote the secretion of

urine, are likewise proper in this stage of the disorder. For this purpose, an ounce of nitre and two ounces of gum-Arabic, pounded together, may be divided into twenty-four doses, one of which may be taken frequently in a cup of the patient's drink. If these should make him pass his urine so often as to become troublesome to him, he may either take them less frequently, or leave out the nitre altogether, and take equal parts of gum-Arabic and cream of tartar. These may be compounded together, and a tea-spoonful taken in a cup of the patient's drink four or five times a-day. I have generally found this answer extremely well, both as a diuretic, and for keeping the body gently open.

When the pain and inflammation are seated high, towards the neck of the bladder, it will be proper frequently to throw up an emollient clyster, which, besides the benefit of procuring stools, will serve as a fomentation to the inflamed parts.

Soft poultices, when they can conveniently be applied to the parts, are of great service. They may be made of the flour of linseed, or of wheat-bread and milk softened with fresh butter or sweet oil. When poultices cannot be conveniently used, cloths wrung out of warm water, or bladders filled with warm milk and water, may be applied. I have often known the

most excruciating pains, during the inflammatory state of the gonorrhœa, relieved by one of these applications.

Few things tend more to keep off inflammation in the spermatic vessels, than a proper suspensory for the scrotum. It ought to be so contrived as to support the testicles, and should be worn from the first appearance of the disease, till it has ceased some weeks.

The above treatment will sometimes remove the gonorrhœa so quickly, that the person will be in doubt whether he really laboured under that disease. This, however, is too favourable a turn to be often expected. It more frequently happens, that we are able to procure an abatement or remission of the inflammatory symptoms, so far as to make it safe to have recourse to the great antidote, *mercury.*

Many people, on the first appearance of a gonorrhœa, fly to the use of mercury. This is a bad plan. Mercury is often not at all necessary in a gonorrhœa; and, when taken too early, it does mischief. It may be necessary to complete the cure, but it can never be proper at the commencement of it.

When bleeding, purging, fomentations, and the other things recommended above, have eased the pain, softened the pulse, relieved the heat of urine, and rendered the involuntary erections less frequent, the patient may begin

to use mercury in any form that is least disagreeable to him.

If he takes the common mercurial pill, two at night and one in the morning will be a sufficient dose at first. Should they affect the mouth too much, the dose must be lessened; if not at all, it may be increased to five or six pills in the day. If calomel be thought preferable, two or three grains of it formed into a bolus, with a little of the conserve of hips, may be taken at bed-time, and the dose gradually increased to eight or ten grains. One of the most common preparations of mercury now in use is the corrosive sublimate. This may be taken in the manner afterwards recommended under the confirmed lues or pox. I have always found it one of the most safe and efficacious medicines when properly used.

The above medicines may either be taken every day, or every other day, as the patient is able to bear them. They ought never to be taken in such quantity as to raise a salivation, unless in a very slight degree. This disease may be more safely, and as certainly, cured without a salivation as with it. When the mercury runs off by the mouth, it is not so successful in carrying off the disease, as when it continues longer in the body, and is discharged gradually.

Should the patient be purged or griped in the night by the mercury, he may take half a drachm

of the opiate confection dissolved in an ounce of cinnamon-water, to prevent bloody stools, which are apt to happen should the patient catch cold, or if the mercury has not been duly prepared. When the bowels are weak, and the mercury is apt to gripe or purge, these disagreeable consequences may be prevented by taking, with the above pills or bolus, half a drachm or two scruples of diascordium, or of the Japonic confection.

To prevent the disagreeable circumstance of the mercury's affecting the mouth too much, or bringing on a salivation, it may be combined with purgatives. With this view, the laxative mercurial pill has been contrived, the usual dose of which is half a drachm, or three pills night and morning, to be repeated every other day; but the safer way is for the patient to begin with two or even with one pill, gradually increasing the dose.

To such persons as can neither swallow a bolus nor a pill, mercury may be given in a liquid form, as it can be suspended even in a watery vehicle, by means of gum-Arabic, which not only serves this purpose, but likewise prevents the mercury from affecting the mouth, and renders it in many respects a better medicine.

It happens very fortunately for those who cannot be brought to take mercury inwardly, and likewise for those whose bowels are too

tender to bear it, that an external application of it will answer equally well, and in some respects better. It must be acknowledged, that mercury, taken inwardly for any length of time, greatly weakens and disorders the bowels; for which reason, when a plentiful use of it becomes necessary, we would prefer rubbing in, to the mercurial pills. The common mercurial or blue ointment will answer very well. Of that which is made by rubbing together equal quantities of hog's lard and quicksilver, about a drachm may be used at a time. The best time for rubbing it in is at night, and the most proper place the inner side of the thighs. The patient should sit beside the fire when he rubs, and should wear flannel drawers next his skin at the time he is using the ointment. If ointment of a weaker or stronger kind be used, the quantity must be increased or diminished in proportion.

If, during the use of the ointment, the inflammation of the genital parts, together with the heat and feverishness, should return, or if the mouth should grow sore, the gums tender, and the breath become offensive, a dose or two of Glauber's salts, or some other cooling purge, may be taken, and the rubbing intermitted for a few days. As soon, however, as the signs of spitting are gone off, if the virulency be not quite corrected, the ointment must be repeated, but in smaller quantities, and at longer inter-

vals than before. Whatever way mercury is administered, its use must be persisted in as long as any virulency is suspected to remain.

During this, which may be called the second stage of the disorder, though so strict a regimen is not necessary as in the first or inflammatory stage, yet intemperance of any kind ought to be avoided. The food must be light, plain, and of easy digestion; and the greatest indulgence that may be allowed, with respect to drink, is a little wine diluted with a sufficient quantity of water. Spirituous liquors are to be avoided in every shape. I have often known the inflammatory symptoms renewed and heightened, the running increased, and the cure rendered extremely difficult and tedious, by one fit of excessive drinking.

When the above treatment has removed the heat of urine, and soreness of the genital parts; when the quantity of running is lessened, without any pain or swelling in the groin or testicle supervening; when the patient is free from involuntary erections; and lastly, when the running becomes pale, whitish, thick, void of ill smell, and tenacious or ropy; when all or most of these symptoms appear, the gonorrhœa is arrived at its last stage; then we may gradually proceed to treat it as a gleet, with astringent and agglutinating medicines.

OF GLEETS.

A gonorrhœa frequently repeated, or improperly treated, often ends in a gleet, which may either proceed from a relaxation, or from some remains of the disease. It is, however, of the greatest importance in the cure of the gleet, to know from which of these causes it proceeds. When the discharge proves very obstinate and receives little or no check from astringent remedies, there is ground to suspect that it is owing to the latter; but if the drain is constant, and is chiefly observable when the patient is stimulated with lascivious ideas, or upon straining to go to stool, we may reasonably conclude that it is chiefly owing to the former.

In the cure of a gleet proceeding from relaxation, the principal design is to brace and restore a proper degree of tension to the debilitated and relaxed vessels. For this purpose, besides the medicines recommended in the gonorrhœa, the patient may have recourse to stronger and more powerful astringents, as the Peruvian bark, alum, vitriol, galls, tormentil, bistort, ballustines, tincture of gumskino, &c. The injections may be rendered more astringent by the addition of a few more grains of alum, or increasing the quantity of vitriol as far as the parts are able to bear it.

The last remedy which we shall mention in this case, is the cold bath, than which there is not a more powerful bracer in the whole compass of medicine. It ought never to be omitted in this species of gleet, unless there be something in the constitution of the patient which renders the use of it unsafe. The chief objections to the use of the cold bath are, a full habit, and an unsound state of the viscera. The danger from the former may always be lessened, if not removed, by purging and bleeding; but the latter is an unsurmountable obstacle, as the pressure of the water, and the sudden contraction of the external vessels, by throwing the blood with too much force upon the internal parts, are apt to occasion ruptures of the vessels, or flux of humours upon the diseased organs. But where no objections of this kind prevail, the patient ought to plunge over head in water every morning, fasting, for three or four weeks together. He should not, however, stay long in the water, and should take care to have his skin dried as soon as he comes out.

The regimen proper in this case is the same as was mentioned in the last stage of the gonorrhœa: the diet must be drying and astringent, and the drink Spa, Pyrmont, or Bristol waters, with which a little claret or red wine may sometimes be mixed. Any person may

now afford to drink these waters, as they can be every where prepared at almost no expense, by a mixture of common chalk and oil of vitriol.

When the gleet does not in the smalllest degree yield to these medicines, there is reason to suspect that it proceeds from ulcers. In this case recourse must be had to mercury, and such medicines as tend to correct any predominant acrimony with which the juices may be affected, as the decoction of China, sarsaparilla, sassafras, or the like.

Mr. Fordyce says, he has seen many obstinate gleets, of two, three, or four years standing, effectually cured by a mercurial inunction, when almost every other medicine has been tried in vain. Dr. Chapman seems to be of the same opinion; but says, he has always found the mercury succeed best in this case when joined with terebinthinate and agglutinating medicines. For which reason the Doctor recommends pills made of calomel and Venice turpentine; and desires that their use may be accompanied with a decoction of guaiacum or sarsaparilla.

The last kind of remedy which we shall mention for the cure of ulcers in the urinary passage, are the suppurating candles or bougies. As these are prepared various ways, and are generally to be bought ready made, it is need-

less to spend time in enumerating the different ingredients of which they are composed, or teaching the manner of preparing them. Before a bougie be introduced into the urethra, however, it should be smeared all over with sweet oil, to prevent it from stimulating too suddenly. It may be suffered to continue in from one to seven hours, according as the patient can bear it. Obstinate ulcers are not only often healed, but tumours and excrescences in the urinary passages taken away, and an obstruction of urine removed, by means of bougies. Obstinate gleets may be removed by the use of bougies.

OF THE SWELLED TESTICLE.

The swelled testicle may either proceed from infection lately contracted, or from the venereal poison lurking in the body; the latter indeed is not very common, but the former frequently happens in the first and second stages of a gonorrhœa; particularly when the running is unseasonably checked, by cold, hard drinking, strong drastic purges, violent exercise, the too early use of astringent medicines, or the like.

In the inflammatory stage, bleeding is necessary, which must be repeated according to the urgency of the symptoms. The food must be

light, and the drink diluting. High-seasoned food, flesh, wines, and every thing of a heating nature are to be avoided. Fomentations are of singular service. Poultices of bread and milk, softened with fresh butter or oil, are likewise very proper, and ought constantly to be applied when the patient is in bed; when he is up, the testicles should be kept warm, and supported by a suspensory, which may easily be contrived in such a manner as to prevent the weight of the testicle from having any effect.

If it should be found impracticable to clear the testicle by the cooling regimen now pointed out, and extended according to circumstances, it will be necessary to lead the patient through such a complete antivenereal course as shall insure him against any future uneasiness. For this purpose, besides rubbing the mercurial ointment on the thighs as directed in the gonorrhœa, the patient must be confined to bed, if necessary, for five or six weeks, suspending the testicle, all the while, with a bag or truss, and plying him inwardly with strong decoctions of sarsaparilla.

OF BUBOES.

Venereal buboes are hard tumours seated in the groin, occasioned by the venereal poison lodged in this part. There are two kinds, *viz.* such

as proceed from a recent infection, and such as accompany a confirmed lues.

The cure of recent buboes, that is, such as appear soon after impure coition, may be first attempted by *dispersion;* and, if that should not succeed, *suppuration.* To promote the dispersion of a bubo, the same regimen must be observed as was directed in the first stage of a gonorrhœa. The patient must likewise be bled, and take some cooling purges, as the decoction of tamarinds and senna, Glauber's salts, and the like. If by this course the swelling and other inflammatory symptoms abate, we may safely proceed to use the mercury, which must be continued till the venereal virus is quite subdued.

But if the bubo should, from the beginning, be attended with great heat, pain, and pulsation, it will be proper to promote its suppuration. For this purpose the patient may be allowed to use his ordinary diet, and to take now and then a glass of wine. Emollient cataplasms, consisting of bread and milk softened with oil or fresh butter, may be applied to the part; and, in cold constitutions, where the tumour advances slowly, white lily roots boiled, or sliced onions raw, and a sufficient quantity of yellow basilicon, may be added to the poultice.

When the tumour is ripe, which may be known by its conical figure, the softness of the

skin, and the fluctuation of the matter plainly to be felt under the finger, it may be opened either by a caustic or a lancet, and afterwards dressed with digestive ointment.

It sometimes however happens, that buboes can neither be dispersed nor brought to a suppuration, but remain hard indolent tumours. In this case the indurated glands must be consumed by caustic; if they should become schirrous, they must be dissolved by the application of hemlock, both externally and internally, as directed in the schirrous testicle.

OF CHANCRES.

Chancres are superficial, callous, eating ulcers; which may happen either with or without gonorrhœa. They are commonly seated in the glands, and make their appearance in the following manner:—First, a little red pimple arises, which soon becomes pointed at top, and is filled with a whitish matter inclined to yellow. This pimple is hot, and itches generally before it breaks: afterwards it degenerates into an obstinate ulcer, the bottom of which is usually covered with a viscid mucus, and whose edges gradually become hard and callous. Sometimes the first appearance resembles a simple excoriation of the cuticle; which, however, if the cause be venereal, soon becomes a true chancre.

A chancre is sometimes a primary affection, but it is much oftener symptomatic, and is the mark of a confirmed lues. Primary chancres discover themselves soon after impure coition, and are generally seated in parts covered with a thin cuticle, as the lips, the nipples of women, the *glans penis* of men, &c.

When a chancre appears soon after impure coition, its treatment is nearly similar to that of the virulent gonorrhœa. The patient must observe the cooling regimen, lose a little blood, and take some gentle doses of salts and manna. The parts affected ought frequently to be bathed, or rather soaked, in warm milk and water; and if the inflammation be great, an emollient poultice or cataplasm may be applied to them. The course will, in most cases, be sufficient to abate the inflammation, and prepare the patient for the use of mercury.

Symptomatic chancres are commonly accompanied with ulcers in the throat, nocturnal pains, scabby eruptions about the roots of the hair, and other symptoms of a confirmed lues. Though they may be seated in any of the parts mentioned above, they commonly appear upon the private parts, or the inside of the thigh. They are less painful, but frequently much larger and harder than primary chancres. As their cure must depend upon that of the pox, of which they are only a symptom, we shall

take no further notice of them till we come to treat of a confirmed lues.

Thus we have related most of the symptoms which accompany or succeed a violent gonorrhœa, and have also given a short view of their proper treatment; there are, however, several others which sometimes attend this disease, as a *stranguary*, or obstruction of urine, *a phymosis, pharphymosis*, &c.

A stranguary may be occasioned either by a spasmodic constriction, or an inflammation of the urethra and parts about the neck of the bladder. In the former case, the patient begins to void his urine with tolerable ease: but, as soon as it touches the galled or inflamed urethra, a sudden constriction takes place, and the urine is voided by spurts, sometimes by drops only. When the stranguary is owing to an inflammation about the neck of the bladder, there is a constant heat and uneasiness of the part, a perpetual desire to make water, while the patient can only render a few drops, and a troublesome *tenesmus*, or constant inclination to go to stool.

When the stranguary is owing to spasm, such medicines as tend to dilute and blunt the salts of the urine will be proper. For this purpose, besides the common diluting liquors, soft and cooling emulsions, sweetened with the syrup of poppies, may be used. Should these

not have the desired effect, bleeding and emollient fomentations will be necessary.

When the complaint is evidently owing to an inflammation about the neck of the bladder, bleeding must be more liberally performed, and repeated according to the urgency of the symptoms. After bleeding, if the stranguary still continues, soft clysters, with a proper quantity of laudanum in them, may be administered, and emollient fomentations applied to the region of the bladder. At the same time, the patient may take every four hours, a tea-cupful of barley-water, to an English pint of which, six ounces of the syrup of marsh-mallows, four ounces of the oil of sweet almonds, and half an ounce of nitre, may be added. If these remedies should not relieve the complaint, and a total suppression of urine should come on, bleeding must be repeated, and the patient set in a warm bath up to the middle. It will be proper in this case to discontinue the diuretics, and to draw off the water with a catheter; but as the patient is seldom able to bear its being introduced, we would rather recommend the use of mild bougies. These often lubricate the passage, and greatly facilitate the discharge of urine. Whenever they begin to stimulate or give any uneasiness, they may be withdrawn.

The *phymosis* is such a constriction of the

prepuce over the glands, as hinders it from being drawn backwards; the *paraphymosis*, on the contrary, is such a constriction of the prepuce behind the glands, as hinders it from being brought forward.

The treatment of these symptoms is so nearly the same with that of the virulent gonorrhœa, that we have no occasion to enlarge upon it. In general, bleeding, purging, poultices, and emollient fomentations, are sufficient. Should these, however, fail of removing the stricture, and the parts be threatened with a mortification, twenty or thirty grains of ipecacuanha, and one grain of emetic tartar, may be given for a vomit, and may be worked off with warm water or thin gruel.

It sometimes happens, that in spite of all endeavours to the contrary, the inflammation goes on and symptoms of a beginning mortification appear. When this is the case, the prepuce must be scarified with a lancet, and, if necessary, divided, in order to prevent a strangulation, and set the imprisoned glands at liberty. We shall not describe the manner of performing this operation, as it ought always to be done by a surgeon. When a mortification has actually taken place, it will be necessary to foment the parts frequently with cloths wrung out of a strong decoction of camomile-flowers and bark,

and to give the patient a drachm of the bark in powder every two or three hours.

With regard to *priapism*, *chordee*, and other distortions of the *penis*, their treatment is no way different from that of the gonorrhœa. When they prove very troublesome, the patient may take a few drops of laudanum at night, especially after the operation of a purgative through the day.

OF A CONFIRMED LUES.

The symptoms of a confirmed lues are, buboes in the groin, pains of the head and joints, which are peculiarly troublesome in the night, or when the patient is warm in bed; scabs and scurfs on various parts of the body, especially on the head, of a yellowish colour, resembling a honey-comb; corroding ulcers in various parts of the body, which generally begin about the throat, from whence they creep gradually, by the palate, towards the cartilage of the nose, which they destroy; excrescences or exostoses arise about the middle of the bones, and their spungy ends become brittle, and break upon the least accident; at other times they are soft, and bend like wax; the conglobate glands become hard and callous, and form in the neck, armpits, groin, and mesentery, hard moveable tumours, like the king's-evil; tumours of dif-

ferent kinds are likewise formed in the lymphatic vessels, tendons, ligaments, and nerves, as the *gummata*, *ganglia*, *nodes*, *tophs*, &c.; the eyes are affected with itching, pain, redness, and sometimes with total blindness, and the ears with a singing noise, pain, and deafness, whilst their internal substance is exulcerated and rendered carious; at length all the animal, vital, and natural functions are depraved; the face becomes pale and livid; the body emaciated and unfit for motion; and the miserable patient falls into an atrophy or wasting consumption.

Women have symptoms peculiar to the sex; as cancers of the breast; the whites; hysteric affections; an inflammation, abscess, schirrus, gangrene, cancer, or ulcer of the womb: they are generally either barren or subject to abortion; or if they bring children into the world, they have universal erysipelas, are half rotten, and covered with ulcers.

The only certain remedy hitherto known in Europe for the cure of this disease, is mercury, which may be used in a great variety of forms, with nearly the same success. Some time ago it was reckoned impossible to cure a confirmed lues without a salivation. This method is now, however, pretty generally laid aside, and mercury is found to be as efficacious, rather more so, in expelling the venereal poison, when ad-

ministered in such a manner as to run off by the salivatory glands.

The only chemical preparation of mercury which we shall take notice of is the corrosive sublimate. This was some time ago brought into use for the venereal disease in Germany, by the illustrious Baron Van Swieten; and was soon after introduced into Britain by the learned Sir John Pringle, at that time physician to the army. The method of giving it is as follows: one grain of corrosive sublimate is dissolved in two ounces of French brandy or malt spirits; and of this solution an ordinary table-spoonful, or the quantity of half an ounce, is to be taken twice a-day, and to be continued as long as any symptoms of the disorder remain. To those whose stomach cannot bear the solution, the sublimate may be given in form of a pill.

Several roots, woods, and barks, have been recommended for curing the venereal disease; but none of them have been found, upon experience, to answer the high encomiums which had been bestowed upon them. Though no one of these is to be depended upon alone, yet, when joined with mercury, some of them are found to be very beneficial in promoting a cure. One of the best we know yet is sarsaparilla.

The mezereon-root is likewise found to be a

powerful assistant to the sublimate, or any other mercurial. It may either be used along with the sarsaparilla, or by itself. Those who choose to use the mezereon by itself, may boil an ounce of the fresh bark, taken from the root, in twelve English pints of water, to eight, adding, towards the end, an ounce of liquorice. The dose of this is the same as of the decoction of sarsaparilla.

We have been told, that the natives of America cure the venereal disease, in every stage, by a decoction of the root of a plant called the Lobelia. Sometimes they mix other roots with it, as those of the ranunculus, the ceanothus, &c.; but whether these are designed to disguise or assist it, is doubtful. The patient takes a large draught of the decoction early in the morning, and continues to use it for his ordinary drink through the day.

Many other roots and woods might be mentioned which have been extolled for curing the venereal disease, as the china-root, the roots of soap-wort, burdock, &c. as also the wood of guaiacum and sassafras; but as none of these have been found to possess virtues superior to those already mentioned, we shall, for the sake of brevity, pass them over.

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